

# intercom

Journal of the Air Force C4 community ★ July 2003



## BATTLELABS

Your ideas are shaping our Air Force

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# intercom



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**THE JOURNAL OF THE AIR FORCE C4 COMMUNITY**

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Stories should be in Microsoft Word format and should be no longer than 600 words. Photographs should be at least 5x7 in size and 300 dpi. Submit stories via e-mail to [intercom@scott.af.mil](mailto:intercom@scott.af.mil).

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# We're in for an exciting ride!

By Tech. Sgt. Jim Verchio

Intercom editor

In just a little more than two months, this is third edition of the *intercom* that I've been privileged to work on. What makes it exciting for me is that this magazine reaches everyone in the comm and info world, from the airmen in the trenches all the way up to the Air Force chief of staff. It's also read at every level of our service and in joint assignments around the world.

It still amazes me that the comm and info community has its own publication—not every career field places so much importance on getting information out to its people.

This magazine has a proud heritage of being a technical journal. It has been, and still is, a means for you to stay informed about warfighting integration, and about the people who work behind the scenes setting policies and procedures, and bringing communications technology to the Air Force.

For those readers who enjoy the technical writing, you should still feel comfortable reading the *intercom*. For readers who prefer to skim the magazine and graze for bites of information, I'm sure you'll find what you're looking for as well. We know the *intercom* isn't your only source of information, but this is the one great forum where you can express your thoughts and share your success stories with the rest of the Air Force. By submitting stories and feedback, you can help steer the transformation of **your** magazine. With *intercom's* range of readership, you can also be sure that senior leaders hear what you are saying.

Even though I'm a Public Affairs craftsman by title, the comm and info community has really embraced me and made me feel part of this close-knit family. I take great pride in knowing that many of "our" airmen are serving at the "tip of the sword," and it humbles me to be able to tell their story and make them feel good about what they're accomplishing every day.

All of us in the comm and info community play an important role in today's Air Force, and that's why we're working hard to tell your story to the public as well. We're proud to wear the uniform and carry our nation's flag into the fight. Our reward are the handshakes and thank yous from our readers, our contributors and those who know virtually nothing about the military other than the fact that we stand proud to serve.

During the next several months you will continue to see your magazine evolve as we tweak its transformation. Already we've added a the *JAG in a Box* column based on one reader's feedback, and we will continue to fine tune the content as we press ahead.

Together we're in for an exciting ride into the future of communications and the Air Force.

## Our Vision

- ▶▶ To serve as the primary public forum for the warfighting integration community
- ▶▶ To keep our readers ahead of the changing times by tracking the pulse of Air Force command and control, communications, computers and intelligence, surveillance and reconnaissance in our news, features and editorials
- ▶▶ To provide the primary means of staying informed about C4ISR people, systems, policy, doctrine, procedures, technology and heritage
- ▶▶ To spread news from all C4ISR organizations, to illustrate better ways of getting our jobs done, to recognize the accomplishments of our people and to chart the careers of our contemporaries.

JAG  
in a Box

Fritz Mihelcic

AFCA Deputy Chief Counsel



## Music-on-hold

**The instruction covering telephone systems management says I can use the radio for my telephone's music-on-hold feature, so why does your legal office say I shouldn't?**

Yes, the instruction you're referring to, AFI 33-111, does allow for that, in paragraph 55.2, but this area of law is unsettled, and there's a difference of opinion with the music industry.

Because there's the risk of a \$30,000 fine per song, you should take the safe approach and not use the radio for Music On Hold.

The AFI does talk about other things to consider if you want to use the radio. How will you pick which station to use? Other stations might complain if they are being left out intentionally or that the Air Force is endorsing one station over the other.

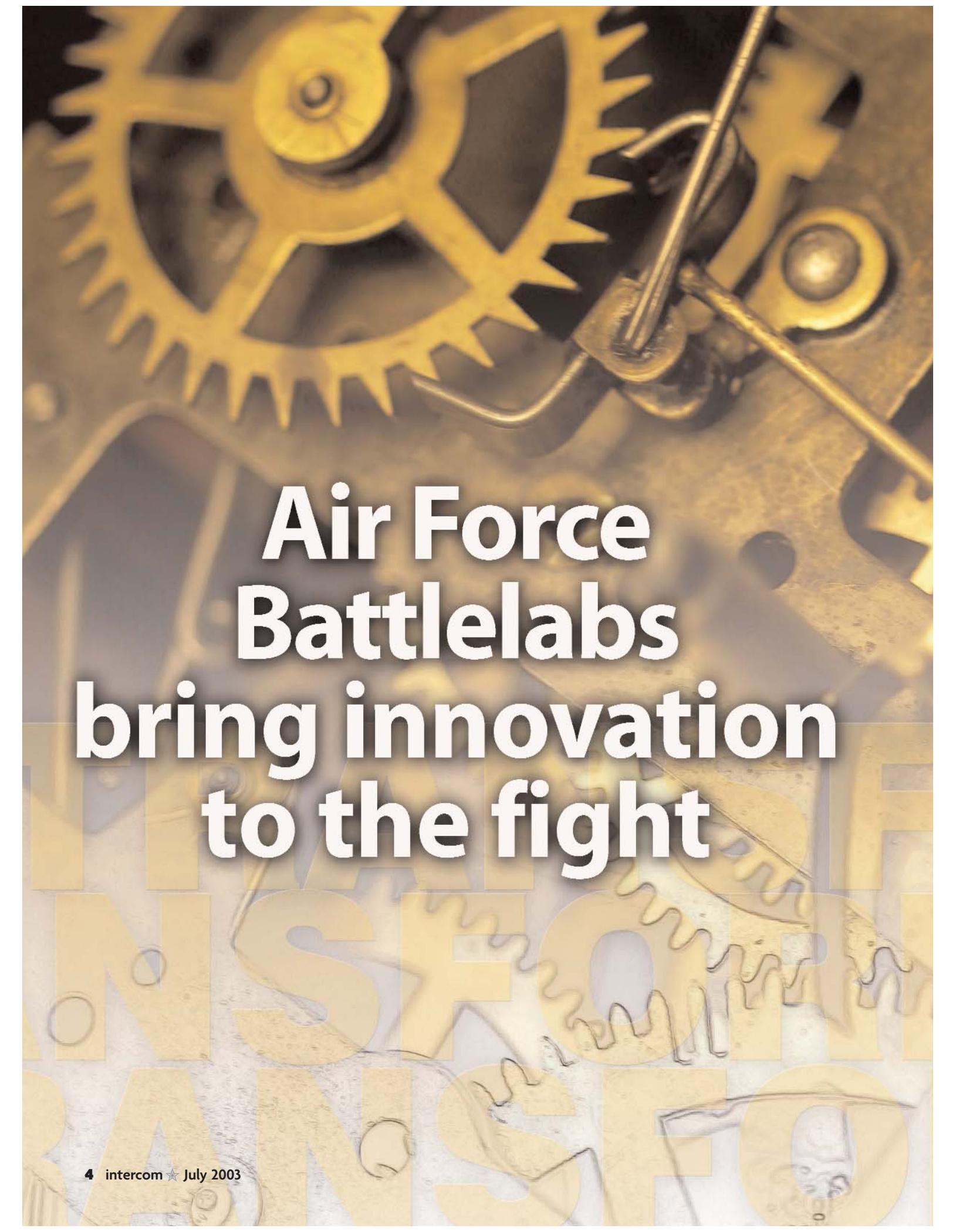
Also, some radio stations have controversial or offensive content at times. Would you want someone on hold to listen to some of the "shock jocks" on the air today? Last, our country is gearing up for another presidential election.

If a person on hold hears a political advertisement for one party, you might have to give the other party equal time, and that could make the base an open forum for all the politicians. I don't think we're ready for that! Play it safe, use royalty-free music on your system, and you won't have to worry.

Do you have a question for legal?

Please send your questions to:

[matthew.mihelcic@scott.af.mil](mailto:matthew.mihelcic@scott.af.mil)



# **Air Force Battlelabs bring innovation to the fight**



**By Lt. Gen. Leslie Kenne**

Deputy Chief of Staff for Warfighting Integration

*Our challenge is to maintain the lead in the innovative use of technology and its integration into air and space operations. Most importantly, we must stay at least two generations ahead of our potential adversaries, a significant challenge with the ever-increasing pace of technology.*

**PENTAGON**—This is a time of dramatic and exciting change in our Air Force. We are actively engaged in a war on terrorism, a war unlike others we have fought, one that challenges existing strategies and doctrine. To meet that challenge, Secretary of Defense Donald Rumsfeld established visionary goals for transforming DoD. Those transformation goals include protecting our bases of operation, projecting and sustaining distant forces, denying our enemies a sanctuary through persistent ISR and rapid engagement and leveraging information technology and innovative concepts.

The Air Force's ingrained culture of innovation has led the way in developing and fielding new concepts and technologies to enhance our warfighting capabilities, and is the principal reason we are the dominant air and space power in the world today. We have a demonstrated ability to quickly respond to our nation's defense needs by anticipating future capabilities, leveraging technology, concepts, and tactics, and then responding with the necessary changes to keep us on the leading edge.

To meet future challenges, the Air Force established the battlelabs in 1997 to rapidly identify innovative ideas with an emphasis on "high pay-off" and "out of the box" concepts. The results are pioneering operations and logistics concepts that have had a direct and positive impact on Air Force organization, doctrine, training, requirements, and acquisitions. The battlelabs span the breadth of our air and space mission and include the Air Expeditionary Force Battlelab, Air Mobility Battlelab, Command and Control Battlelab, Force Protection Battlelab, Information Warfare Battlelab, Space Battlelab and Unmanned Aerial Vehicle Battlelab.

The mission of the battlelabs is to "identify innovative concepts and measure their worth." As the Air Force's focal point for warfighting integration, AF/XI leverages their successes to provide uncontested air and space combat capability. Innovation at the battlelabs fuels the Air Force transformation process and enables the delivery of capabilities that will support our service well into the 21st Century.

The success of Air Force Battlelabs can be exemplified by the tremendous value provided by the Predator UAV—not just the airframe but also the innovative concept of operations. Through battle-tested command and control technologies and processes, we are dramatically shortening the kill chain timeline. We saw its worth in Operation Iraqi Freedom and, rest assured, further reductions will be achieved which will be vital to victory in future engagements.

Another high payoff battlelab initiative used during OIF is the C2B Master Air Attack Plan Toolkit. The previous MAAP process was time consuming and labor intensive. The MAAP Toolkit brings real-time planning information to the MAAP Cell through an operationally friendly, machine-to-machine interface that expedites MAAP development and transmission to the Theater Air Planner. The MAAP Toolkit lays out the basic scheme of air operations within a single air tasking order and automatically builds target-planning worksheets and transfers this information to TAP without the need for human data entry. The automatic transfer and compilation of data will dramatically increase manpower effectiveness for the Air Operations Center MAAP and ATO Production Cells.

These innovative capabilities, and well over a 100 more, had their genesis in our battlelabs. Our challenge is to maintain the lead in the innovative use of technology and its integration into air and space operations. Most importantly, we must stay at least two generations ahead of our potential adversaries, a significant challenge with the ever-increasing pace of technology.

The AF Battlelabs are helping us win the war against terrorism and are the key to the effective transformation of the Air Force to meet 21st century challenges.



## Who they are

### Information Warfare Battlelab

**KELLY AFB, Texas** — Working in the Air Force Information Warfare Battlelab here is one of the best jobs in the Air Force. It's also one of the few places where one person can make a big difference in supporting the warfighter directly.



AF-IWB is the only battlelab in DoD which focuses exclusively on information operations. The incredible breadth of information operations gives AF-IWB perhaps the broadest charter of any of the seven Air Force battlelabs. That charter covers the full range of IO including both information warfare and information-in-warfare. IW strives to attack or defend information via new offensive and defensive capabilities in electronic warfare, counterintelligence operations, psychological operations, operations security, and defense of communications and computer networks.

Meanwhile, information-in-warfare seeks to gain and exploit information in traditional areas of weather, precision navigation, and intelligence, surveillance and reconnaissance.

AF-IWB's project officers are the primary reason for the battlelab's continual off-the-chart success. These officers and enlisted personnel from a variety of AFSCs—comm-info, pilots, electronic warfare, space, engineers and others—use all their skills, experience and extremely creative methods to ferret out the promising technologies with military worth and rapidly to these capabilities into the warfighter's hands.

Bottomline: U.S. taxpayers are getting real value for their dollar; the AF Information Warfare Battlelab is taking useful innovation in all realms of information operations and rapidly delivering it to AF operational users.

### Space Battlelab

**SCHRIEVER AIR FORCE BASE, Colo.** — The Space Battlelab draws upon active, Reserve, and Guard capabilities and expertise to measure the potential worth of concepts ranging from modeling and simulation to actual employment of exploratory capabilities in operational environments.

This is in contrast to the test centers that use formal test projects to prove the abilities of new equipment.

Battlelabs use video conferencing as well as unclassified and classified Internet technologies to enable rapid use of dynamic techniques designed to identify promising concepts.

Using an online forum called the Battlelab Planning Cell, the battlelabs work together and with other organizations to generate and coordinate the plans necessary to demonstrate and measure the worth of promising concepts. Success is measured by whether or not ideas lead to superior ways to employ Air and Space Forces.



### Air Expeditionary Force Battlelab

**MOUNTAIN HOME AIR FORCE BASE, Idaho** — The Air Expeditionary Force Battlelab represents 22 different career fields among 25 military personnel.



The AEFB conducts Military Utility Assessments on technologies or processes that have a potential to make AEF

operations lighter, leaner or more lethal by: Reducing deployment support structure—lighter; Reducing mobility response time—leaner; Increasing deployed combat capability and effectiveness—more lethal.

After demonstrating each initiative, the AEFB provides valuable information to senior Air Force leaders and the Air Force acquisition community. Completed AEF Battlelab MUA's

enable leadership to decide whether or not to procure these new technologies or adopt process improvements or wait for future technology improvements. In several cases, AEF Battlelab initiatives have resulted in significant cost avoidance by Air Force procurement authorities after demonstrating ideas that do not meet Air Force requirements or are not sufficiently mature to warrant procurement.

#### Articles in this series written by:

**Michael Jackowski** and **Tech. Sgt. Jeffrey Phillips**--IWB; **Capt. Erick Jordan**--AEFB; **Capt. Scott Stevens, Capt. Brett Conner** and **Maj. Dave Mulligan**--SB; **Lt. Col. Mark Surina**--AMB; **Capt. Mary Bartholomew** and **Tony Muccio**--UAVB

# Command and Control Battlelab

**HURLBURT FIELD, Fla.** — The Command and Control Battlelab is a small, responsive organization whose mission is to rapidly identify and prove the worth of innovative C2 ideas to improve the ability of the Air Force to execute its core competencies to support joint



warfighting. The C2B explores and measures the potential worth of these innovative concepts using operational and technical subject matter experts and required support equipment, and develops courses of action ranging from modeling and simulation to actual employment of forces in warfighting exercise environments.

Each initiative is formally assessed,

and as a result, recommendations are made to senior leadership as to how the Air Force organizes, trains, equips and acquires C2 systems and capabilities. To carry out its mission, the C2B interfaces with the other Air Force Battlelabs, the JFCOM Joint Battle Center, other Service Battlelabs, and Air Force and DoD research community product centers.

## Air Mobility Battlelab

**FORT DIX, N.J.** — There's a greenhouse for innovation for the Air Force's air transportation system here; it's called the Air Mobility Battlelab. The AMB, the youngest of seven Air Force battlelabs, was established in 2001 as a unit of the Air Mobility Warfare Center, and the staff seeks ideas to propel mobility air forces to new heights of effectiveness. AMB takes into consideration any type of improvement to the airlift and air refueling business.



Those ideas can include command and control, communications, base operating support, aeromedical evacuation, aircrew and cargo handling and even special operations concepts. The AMB can conduct experiments within any of the active-duty, Guard or Reserve air mobility forces.

The Battlelab's product is information. It reports on the concept of operations and potential of a new technology or technique to improve the rapid global mobility of the Air Force and the customers of the air mobility system, including the Army and other services. AMB's report, at the end of its demonstrations, might spark a change to formal requirements, a test program or an acquisition decision. Partnership is crucial to AMB's work. AMB calls on experts from the research and development community, universities, DoD laboratories and industry to investigate new concepts and ideas with the potential to solve tough problems, or to take advantage of new technologies, tactics and procedures. Fellow agencies in the AMWC provide an additional source of expertise to span the range of missions required by air mobility customers.

## Force Protection Battlelab

**LACKLAND AIR FORCE BASE, Texas** — The mission here is to identify innovative concepts for protecting Air Force people, facilities and weapon systems; rapidly measure the potential for advancing Air Force core competencies; and to explore joint warfighting by using field ingenuity, modeling, simulation, and actual employment of exploratory capabilities in operational environments. The FPB is a cross-functional team, comprised of 40 military and civilian personnel, contractors, Reserve and Guard forces. The FPB requires "proof of concept" to explore ideas for the force protection arena.



## UAV Battlelab

**EGLIN AIR FORCE BASE, Fla.** — Pushing the envelope of Unmanned Aerial Vehicle technology is the UAV Battlelab located here. The UAVB seeks to improve the operational employment and support of Predator and Global Hawk, and has recently started addressing the emerging roles and technologies of small, tactical UAVs. The UAVB's mission is to rapidly identify and demonstrate the military worth of



innovative concepts, which exploit unique characteristics of UAVs to advance Air Force combat capability. The Battlelab has approximately 30 military, civilian and contractor personnel working together to accomplish this mission, who come from various Air Force career fields including pilots, navigators, intelligence, communications, logistics, acquisition and engineers.

The work conducted by the UAVB encompasses a wide array of mission areas from air interdiction and Combat Search and Rescue to special operations and Suppression of Enemy Air Defenses. The UAVB has successfully demonstrated more than 15 innovative concepts to enhance UAV capabilities and warfighter effectiveness.



# Success Stories

## IWB

*Since its founding on March 17, 1997, the Information Warfare Battlelab has completed more than 33 concept demonstrations. Currently, there are 10 more in the process of being demonstrated and 41 more in the pipeline.*

### Leaflet bombs

One example of IWB's "cool stuff" is an initiative called Leaflet Bomb, an idea that came from a master sergeant in Air Intelligence Agency's psychological operations division.

The concept was to use demilitarized munition canisters as a robust supplement to the current fiberglass psychological leaflet dispenser. IWB found a suitable obsolete munition canister, the Rockeye, that could be modified to drop leaflets from high-performance aircraft such as the F-16. Now called the PDU-5/B, these canisters can deliver about 60,000 leaflets at a cost of less than \$500 per unit. The project went from demonstration to the field in about nine months allowing Leaflet Bomb to be used in both Operations Enduring Freedom and Iraqi Freedom. In fact, in Iraqi Freedom, PDU-5/Bs deployed before the first iron started hitting targets in Baghdad.

Few would have imagined the IWB

### Iraqi Freedom leaflet dropped by PDU-5B canisters



efforts would be so influential in contributing to Air Force combat operations. But as Capt. Steve Burke, winner of the USAF General Billy Mitchell Battlelab Project Officer of the Year for 2002, said: "it's all in a day's work."

The Leaflet Bomb was a little unusual for IWB in that the initiative came from an internal USAF source. Uniquely among the Air Force battlelabs, almost 75 percent of the 400-plus concepts IWB has evaluated have come from external sources: industry and academia.

### Radio Threads

One such project with potential for use in on-going operations is an initiative called Radio Threads. This concept is a small, inexpensive, low-powered radio transmitter that can be air-dropped, remotely activated, remotely controlled, and used in a variety of roles to include blocking selective frequencies or entire radio bands. Sister service representatives from the Marine Corps have picked up the project. The Corps is allocating resources to further develop the initiative into a tool that Marine forces can use on the ground. Radio Threads is just one example among many of the inherently joint nature of this battlelab's projects. Unlike other acquisition processes, IWB's is not requirements-driven. This means the battlelab's goal is to make sure it stays in touch with major commands and their documented needs, but doesn't always mandate an established need or requirement before proceeding with a concept demonstration. An excellent example of how and why this works is a concept called Telecom-munications Firewall or TeleWall.

### TeleWall

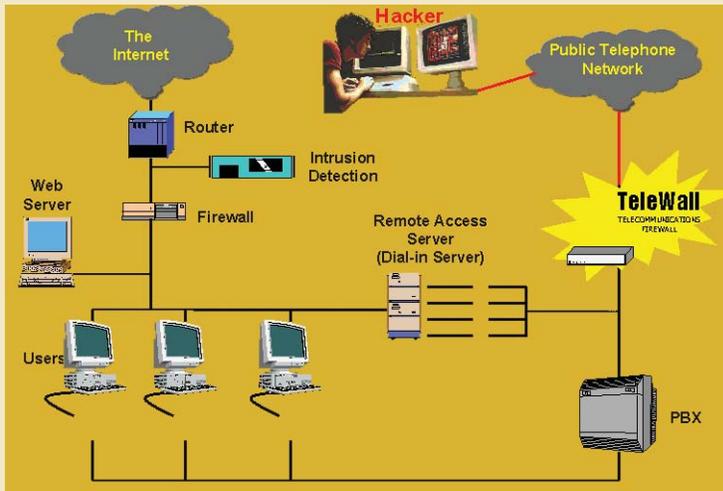
Telewall was a revolutionary technology that ported a standard data network firewall onto telephone lines to protect telecommunications networks, e.g., back-door modems. However, at the time there was no established requirement for firewalls for telephones. The vendor brought in a prototype system and in just 57 days, the battlelab arranged a demonstration at three Air Force Space Command bases. The demonstration was so successful at implementing real-time operations security that Space Command purchased all the demo units on the spot and kept them in place. In the words of IWB's commander, Col. Nate Titus: "that's the ultimate compliment, when they want us to leave food on the table."

Today, the Air Force is actively acquiring and installing Telecommunications Firewall systems at all 140 Air Force bases, Air National Guard bases and AF Reserve bases worldwide where it has only just begun to play an active role in the war on terror by protecting Air Force networks.

### Ciphony

An initiative which extends the Telecommunications Firewall is Ciphony. This concept automates operations security by Triple-DES encrypting unclassified telephone calls without the users' needing special phones, keys or other encryption gear. Although this is not the same type of encryption used by STU-III telephones, this 128-bit encryption is a level of protection that the bad guys will find hard to break. A simple hardware and software addition to the already existing Telecommunications Firewall boxes makes all this happen. Ciphony is crucial to protecting unclassified essential elements of critical information and command and control operations. Implementation of Ciphony is another success story in the

## The TeleWall initiative detects violations of established telephone policies and can block them in real time.



making with both AFCA and IWB working to transition it into the operational Air Force.

### Charged coupled device

Visible Missile Warning System uses a charged coupled device camera—the same type that powers your home camcorders—to rapidly detect surface-to-air missile launches. Results against “smoky SAMs”—dummy rockets that model SAM plumes—showed faster detection time over typical infrared detectors with significantly lower false alarm rates. This initiative performed so well against the “smoky SAMs” that it is now scheduled to fly against the real thing.

### Instant DataProtect

Software crashes are the cause of most such system outages, and to be able to restore a crashed workstation in seconds vs. hours or days means a lot to operational users.

In February, AEFB successfully demonstrated the IDP initiative on a live network at RAF Mildenhall, United Kingdom, which showed the military utility of the quick restoration times IDP provides from system corruptions in an operational environment. Corruptions defeated in the demon-

stration were viruses, registry corruption, and format as well as other attacks. Instant Data Protect uses a software algorithm quickly and efficiently to restore a computer hard disk. This allows immediate recovery from viruses, Trojan horses and stupid user antics. Where it used to take two to three days to rebuild an Exchange server, IDP can bring it back to full operations in less than 15 seconds.

The program runs on individual workstations or on servers using non-redundant array of independent disks hard disk configurations. The program runs in the background and provides protection by filtering all write commands to the hard drive.

IDP takes a snapshot of the hard drive's data and configuration and can store up to 10 such snapshots. Each snapshot is a complete binary inventory of the hard-drive contents and occupies less than .01 percent of total hard drive space.

Even with a full complement of 10 snapshots, this only takes up .1 percent of the drive. By comparison, most of the currently existing solutions require at least half a hard drive—50 percent or more for similar type of recovery systems.

Viruses that attempt to attack the

hard drive neither hinder IDP nor cause damage to the PC. Because IDP's protection protocol begins prior to the operating system's boot-up process, a virus cannot damage the snapshots since it doesn't know they exist. Simple recovery to a snapshot before the infection occurred completely removes the virus from the machine. For Trojan horses, IDP has unique recovery functionality. It boots up on a previous snapshot and mounts the crashed session to recover all data from before the malicious code infected the drive.

“In addition to IDP's ability to protect our vital information resources, it would provide huge benefits in the AF's education and training environments,” said Capt. Garald Egts, instructional technologies project manager from HQ AETC's Technology Branch. “Instructors will be able to establish and easily transition between pre-configured training environments and scenarios on classroom computers. For example, workgroup manager courses could create different checkpoints with existing problems, such as the printer drivers not installed correctly, for students to troubleshoot.

As it takes only seconds to restore a system, this will provide instructors with flexibility not currently available. It also better reinforces students' training with more diverse, hands-on scenarios in less total time.”

### Reachback

Reachback was IWB's first demonstration. This initiative provided classified satellite communications to deployed intelligence and combat units. The project was so successful during an Air Force Green Flag exercise, it became the blueprint for all the other information reachback capabilities used on joint systems and special operations combat platforms. Reachback has already transitioned to Air Force and sister services combat systems. ►►

# AEFB

During the course of its six-year history, the AEFB has evaluated more than 336 ideas from industry and field sources. Out of these, 23 have been completed and briefed to the Air Force Requirements for Operational Capabilities Council. Fifteen initiatives are currently in advanced development and many concepts are being assessed and developed for possible initiatives. Past AEF Battlelab initiatives include:

## Enhanced Maintenance Operations Capabilities

Enhanced Maintenance Operations Capabilities demonstrated the ability to replace existing homegrown software tools with a command-wide visualization tool that can be used in tracking daily aircraft maintenance and sortie operations of a flying unit at home or while deployed.

## Wireless Immediate Communications for Entire Base

Wireless Immediate Communications for an Entire Base

demonstrated the ability to provide rapid communications for customers located within tents or buildings by using a radio frequency and infrared wireless local area network and provided Voice over Internet Protocol.

## AEF Data Compression

AEF Data Compression proved the feasibility of using commercial off-the-shelf equipment and software to compress standard office application files, audio, video and imagery data for multiple applications within the AEF.

*In addition to the above communications and software related initiatives, the AEF Battlelab has brought numerous advancements to the warfighter outside of the realm of communications. Some current initiatives from the aerospace ground equipment and medical functional areas include:*

## Mobile Aircraft Jacks and Equipment Kit

The Mobile Aircraft Jacks and Equipment Kit addresses the standardization issue of aircraft jacks. It will provide an easily deployable, universal jack for the majority of AEF heavy air-

craft. It will replace the current jacking system that includes a diesel driven pumping unit and hydraulically operated jacks. MAJEK will also supply a deployable load tester that is currently not available.

## Hemostatic Agent for Life Saving

The AEFB and the Force Protection Battlelab have partnered to assess a hemostatic agent to control hemorrhage of AEF personnel deployed in wartime and peacetime contingencies. The HEAL initiative is innovative in that it works significantly faster, requires no mixing, is stable at room temperature, is available in multiple formulations and is packaged in a manner that allows the injured individual to self-administer if necessary.

# C2B

## Master Air Attack Planning Toolkit

A recently completed initiative, the Master Air Attack Planning Toolkit initiative, illustrates the C2B process. Following approval, the C2B brought in a group of MAAP subject matter experts from the Air Force Numbered Air Forces, the Navy and the Marines to participate in a Warfighter Analysis Workshop to lay out the look, feel and functionality for the MAAP TK initiative. Then June 26, 2001, the contract for development was signed. During the next 14 months, several more meetings with warfighter subject matter experts were hosted to review progress and insure the correct vector for the MAAP TK. A warfighter assessment of the finished product was conducted as part of Joint Forces Experiment 02 in August 2002, where the MAAP TK was rated a "home run" by the warfighter, operators and assessors.

Following a report to Air Force leadership, the C2B worked to acquire



Data compressions will reduce standard office application files, audio, video and imagery for multiple uses within the AEF.

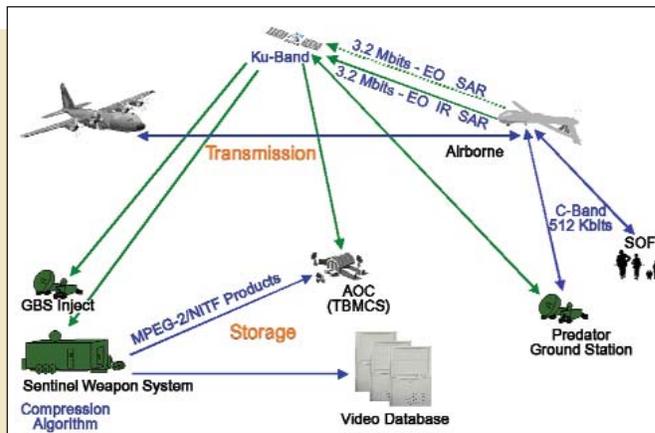
funding for transition of the MAAP TK into the joint air operations planning system of record, Theater Battle Management Core Systems. MAAP TK will be integrated into TBMCS version 1.1.3. At the same time, at the request of the warfighters in the Combined Air Operations Centers in Saudi Arabia and Korea and at the direction of Air Force leadership, the C2B provided mobile training teams to install and train the MAAP TK at Prince Sultan Air Base, Saudi Arabia, and the Hardened Tactical Air Control Center in Korea. The MAAP TK was used in planning of the air war in Iraq for Operation Iraqi Freedom.

### B-52 Close Air Support

The B-52 Close Air Support Enhancement initiative will demonstrate transmitting a digital 9-line Close Air Support message from Tactical Air Control Party Modernization equipment to a B-52. This capability will improve Air Force support to CAS operations. The Army Air Force Data Exchange System initiative will demonstrate that automating data exchange, at the database level, between Army Battle Command System and Theater Battle Management Core Systems systems in the Joint Air Operations Center will significantly improve situational awareness for JAOC decision makers.

### Visualization of Expeditionary Sites Tool

The Visualization of Expeditionary Sites Tool will provide a capability that provides rapid, explicit presentation of all critical support data; weighting of operational and support parameters; and production of a list (with pictures, limiting factors and alternatives) for planners to evaluate and select the "best" location for basing of forces in support of expeditionary operations. VEST will give logistics planners the capability to make timely, informed site selections.



The DIVOT initiative will be able to detect both man and machine objects based on visual signatures.

# UAVB

### Stingray

A recently completed initiative provides Predator with the capability to locate, track and identify mobile targets of interest.

The goal was to enhance Predators' operational capability by using the Tactical Endurance Synthetic Aperture Radar in Moving Target Indicator mode.

This initiative, nicknamed Stingray for the maritime MTI applications, was successfully completed. The overall results of the demonstration clearly indicated that the capability to detect, track and identify mobile targets using the MTI mode of the TESAR enhanced Predators' operational capability.

### DIVOT

Another ongoing initiative is Digital Imagery Video-compression and Object Tracking that substantially decreases communication requirements for disseminating UAV products, decreases storage requirements for production and exploitation facilities and reduces the image analyst workload. DIVOT shows significant promise in helping meet the functional needs of the warfighter in the areas of situational awareness, targeting, collection man-

agement, battle damage assessment and order of battle maintenance.

The UAVB integrates the compression algorithm directly on the Predator airframe where video will be compressed directly from the sensors.

The compressed video is then fed to the Predators' communication suite where it will be transmitted via the Ku-band satellite, C-band air-to-air, and C-band air-to-ground links.

In addition to the data compression, the initiative will demonstrate an object identification capability that can cue operators to the detection of both man and machine objects based on visual signatures.

Once analyzed, the video will be further compressed and stored on databases for future retrieval and follow-on dissemination.

During an initial phase of this initiative, the UAVB conducted a military utility assessment at the Eglin range. The Air Force Communication Agency assisted the UAVB in the assessment, and provided an independent validation and verification process for the results.

Outside interest is growing for DIVOT as the Office of Naval Research has expressed interest in using DIVOT to compress all ship-to-shore communications. In addition, the UAVB and NIMA are discussing the potential of integrating it into the MPEG-2 transport stream and thereby become the industry standard. ▶▶

# SB

## Carrier Interferometry

Carrier Interferometry was originally developed for cellular communication and wireless networking applications. The technology applies specific principles of quantum mechanics, employing interferometric components of wave theory. CI is based on combining Orthogonal Frequency Division Multiplex with phase shifting. With CI the Air Force hopes to achieve improvements in throughput and increase the number of users employing existing frequency bands.

CI is a technological approach that couples frequency and phase shifting to decompose a signal into components to provide significant performance enhancements over conventional transmission protocols.

Potential CI improvements to conventional protocols include sharing or trade-offs among data-rates, power-outputs, bit-error rates, number of users and transmission times required to pass data.

Also, CI techniques reduce both noise and multipath interference degradation found in traditional radios and protocols. In general, the more severe the environment, the greater the benefits produced by CI when compared to traditional waveforms. Even in an ideal environment with low noise and multipath interference, CI should provide a three to four decibel gain. Significantly lower power is needed for CI transmissions to achieve the same bit-error rates and signal-to-noise ratios as traditional modulation formats. Because of lower current drain, it is possible to extend battery life, lighten operator physical loads and use smaller or fewer batteries.

CI enables frequency-based combining of received signals, which

**Warfighters still have to fight in sandstorms and rain clouds ... that's why SB is examining pulsed lasers which penetrate obscurants and maintain high data rates.**



enables a more efficient processing of the received energy, thus, significantly improving performance. Performance improvements can be used to provide any combination of increased range, reduced transmission power, improved interference mitigation and increased data throughput.

## Lite Catcher

Doing what some call impossible is the task of the Air Force's seven battlelabs, and one such seemingly impossible task is the Lite Catcher initiative, that will demonstrate a free space optical link through clouds.

Free space optical networks are communications networks that use lasers instead of radio frequencies to carry information.

Lasers can transmit hundreds even thousands of times more information than radio frequencies. Removing bandwidth as a restriction is critical to transforming military communications. Warfighters would no longer have to wait hours for critical yet bandwidth-intensive data, such as videos from unmanned aerial vehicles or high-resolution imagery.

However, there are drawbacks to laser communications and free space optical networks. Atmospheric turbulence can distort the laser beam, causing data to be lost. Scientists have spent years developing technologies such as adaptive optics in an attempt to overcome atmospheric distortion. However, one problem remains: weath-

er. Light particles, called photons, are still susceptible to scattering off of water droplets, smoke or sand. As Operational Iraqi Freedom demonstrated, warfighters still have to fight in the presence of sandstorms and rain clouds. It's for this reason that the Space Battlelab is examining new technologies such as pulsed lasers to penetrate obscurants and maintain high data rates.

The Space Battlelab is familiar to weather penetration technologies.

For example, the battlelab's Combat Eye demonstration in the fall of 2002 used solid-state pulsed lasers to penetrate clouds, smoke and even camouflage to give a 3-D image of a target.

This highly successful demonstration included ground-to-ground imaging at Yuma Proving Grounds and airborne imaging from a C-130. For the Combat Eye demonstration, the Space Battlelab partnered with Air Force Research Laboratory and Air Force TENCAP, or Tactical Exploitation of National Capabilities.

Extending the technology from the Combat Eye demonstration to the Lite Catcher communications demonstration is the logical next step. The Battlelab, AFRL and AF TENCAP partnership will also continue. The weather resistant Lite Catcher system as demonstrated will have a data rate of one gigabyte per second and ranges in excess of 25 km, although operational variants will likely have a magnitude increase in data rate and range.

## Phased Array Antenna

SB has teamed with AFSC, the Space and Missile Systems Center, Air Force Research Laboratory and the 50th Space Wing to demonstrate the military utility of a phased array antenna for telemetry, tracking and commanding within the Air Force Satellite Control Network. NASA has also agreed to support the demonstration to show the capability to support a future Integrated Satellite Control Network. The AFSPC Review Board approved the initiative and it's on schedule for a Spring 2004 demonstration.

This is a shift in which electronically steered phased array antennas could replace the mechanically steered dish antennas. Military, government and commercial satellites providing telecommunications, environmental, navigation and surveillance services in various orbits need high performance, multi-function antennas with hemispherical coverage. These antennas perform TT&C to support their payload and spacecraft platform operations. Phased array antenna technology using electronically steerable arrays are the optimum choice for this application because they can provide multiple, independently steered beams with fast beam steering/switching and simultaneous transmit/receive operation. In addition, they offer high reliability, graceful degradation, lower maintenance and more automated operation. Phased array antennas could be employed to cost-effectively support large numbers of satellites (all altitude) at various stages of operation from launch, orbit transfer, and early orbit checkout to on-orbit and disposal operations. Phased array antennas are also candidates to support future concepts of satellite operation, space based data relay systems and ground/space-based launch ranges envisioned by the Air Force satellite operations planning community. The current AFSCN architecture is based on mechanical parabolic reflector antennas which have

limitations including: cable wrap; key-hole effect; frequent and costly maintenance; long reconfiguration time; manual antenna operation; and high life-cycle cost. In addition, separate antennas are required for multiple satellite contacts. Current AFSCN resources are operating at or near saturation.

To date, phased array antennas have not been used for satellite TT&C operations primarily because of their high acquisition cost in comparison to technically inferior, but cheaper conventional reflector antennas. However, with rapidly emerging monolithic micro-integrated circuits, electronic beam forming, and beam steering technologies as well as low cost commercial off-the-shelf components from the cell phone industry, large phased array antennas have become affordable candidates for TT&C in support of Air Force satellite and launch range operations.

# AMB

## MAIL

One example of Air Mobility Battlelab success in its partnerships is the recently completed joint project with the Air Expeditionary Force Battlelab. The Mobility Aircrew Information Library, or MAIL project, showed how digitized flight publica-



**When USAFE requested an inexpensive way to equip its aircraft with alternate voice communications, AMB found a way to use iridium satellite phones in flight.**

tions, flight planning information, Falcon View maps and live threat feeds could be provided to the aircrew using a tablet-sized knee board computer and a miniaturized radio receiver. This project showed how to inexpensively reduce paperwork for the aircrew while providing easy access to information crucial to worldwide air mobility and fighter missions. Currently, in partnership with Air Force Research Laboratory at Rome, N. Y., and AMC, the AMB is maturing a capability to provide AMC flight dispatchers with rapid access to the many sources of information that may affect flight planning and execution, such as giving instant updates for Notices to Airmen, weather and diplomatic clearances.

## Iridium satellite phones in flight

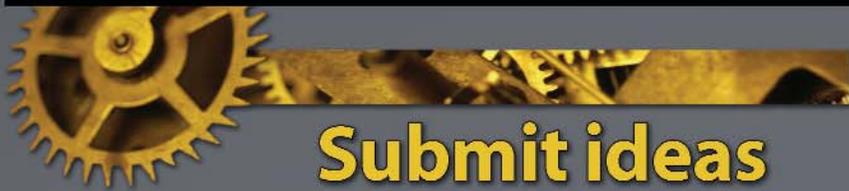
One of AMB's biggest successes tackled global communications. When U. S. Air Forces in Europe requested an inexpensive way to equip its aircraft with alternate voice communications, an AMB project officer designed a way to use iridium satellite phones in flight. The idea was demonstrated in the field in partnership with the AMC test community ... and has been implemented on several aircraft.

## Chelton antenna mount

Another AMB communications project prototyped a new mounting system for a Chelton antenna on the C-17 for special operations use. AMB's design was adapted by the C-17 contractor and is now in use.

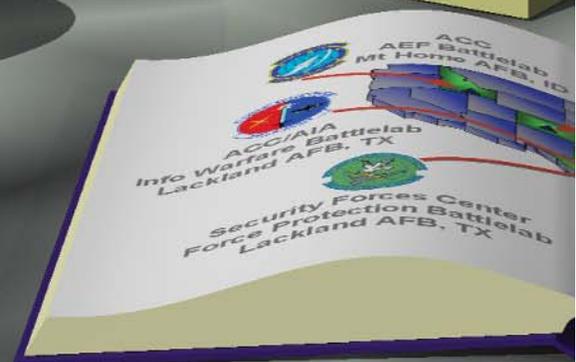
## Automatic tracking systems

The Battlelab is also investigating improvements in managing base armory inventories by linking a contact memory button on firearms with an automated tracking system that also integrates personnel identification, qualification, Personnel Reliability Program status and weapon maintenance.



## Submit ideas

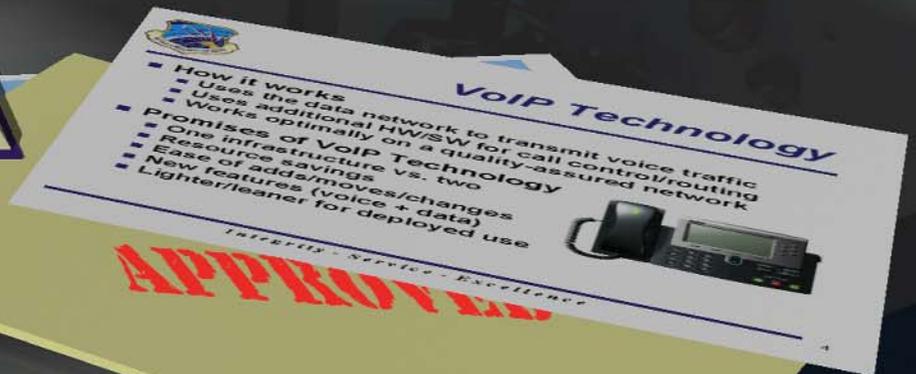
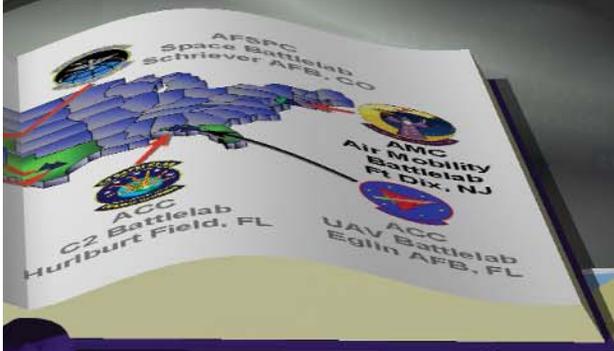
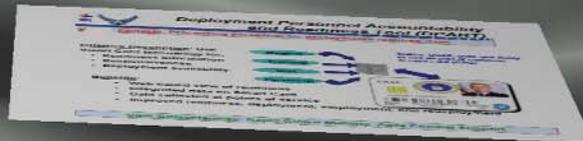
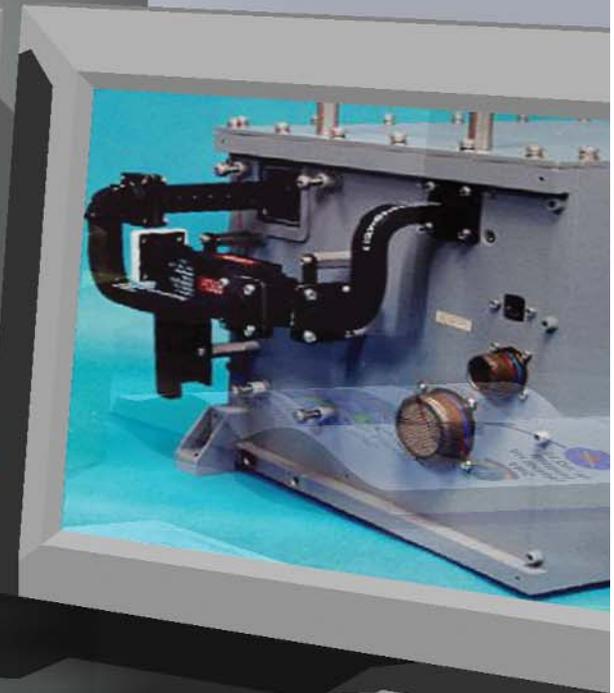
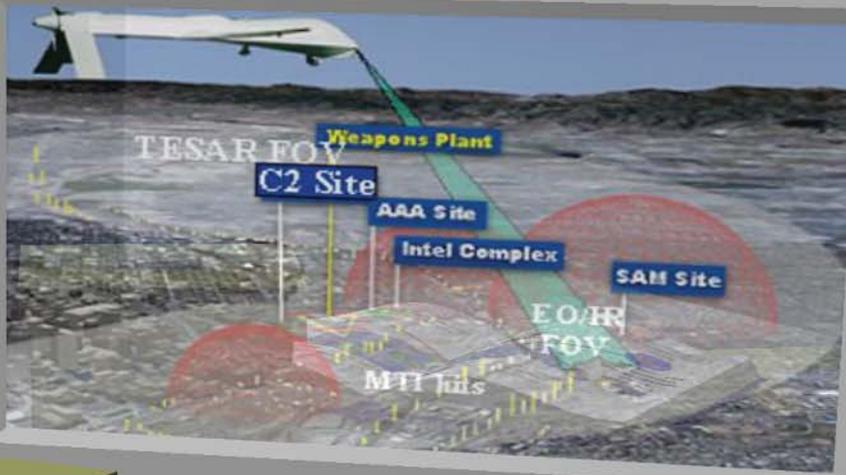
- ▶ Battlelabs can accept ideas from any source and from people ranging in rank from airmen or sergeants on the flightline to civilians or from other military services.
- ▶ Upon receipt of an idea, a project officer is assigned to seek formal approval to conduct an initiative. Pending approval of the initiative, the project officer then leads a 12 to 18 month initiative before presenting the results to leadership.
- ▶ Contractors interested in gaining an entry point into the Air Force modernization process can present ideas through AEF Battlelab Broad Agency Announcement posted to Federal Business Opportunities at [www.fedbizopps.gov](http://www.fedbizopps.gov).



Space Battlelab  
[www.schriever.af.mil/battlelab](http://www.schriever.af.mil/battlelab)  
Air Mobility Battlelab  
[www.amwc.af.mil/battlelab/](http://www.amwc.af.mil/battlelab/)  
Command and Control Battlelab  
[www.c2b.hurlburt.af.mil](http://www.c2b.hurlburt.af.mil)  
Force Protection Battlelab  
[afs.lackland.af.mil/battlelab/](http://afs.lackland.af.mil/battlelab/)  
Air Expeditionary Force Battlelab  
[www.mountainhome.af.mil/AEFB/](http://www.mountainhome.af.mil/AEFB/)  
Unmanned Aerial Vehicle Battlelab  
[www.fas.org/irp/agency/usaf/acc/awfc/53w/uavb](http://www.fas.org/irp/agency/usaf/acc/awfc/53w/uavb)  
AF Information Warfare Battlelab  
[afiwweb.lackland.af.mil/battlelab/index.htm](http://afiwweb.lackland.af.mil/battlelab/index.htm)

# USAF Battlelabs Innovation Division

[www.xi.hq.af.mil/afbattlelab/](http://www.xi.hq.af.mil/afbattlelab/)





Courtesy photo

The Combined Air Operations Center at Al Udeid AB, Qatar, served as the central hot spot for all operations in and around Iraq during Operation Iraqi Freedom. The Desert Falcon project constructed the networking infrastructure, enabling the CFACC to make decisions in real time.

# THE WAR ROOM

## Desert Falcon team sets up OIF nerve center

By Tech. Sgt. Jim Verchio  
Intercom Editor

SCOTT AIR FORCE BASE, Ill. — Perched ready to strike, the Combined Forces Air Component Commander awaits his orders from the Pentagon. The electronic intelligence reports are gathered and displayed on the large video screen. A Predator, the Air Force's Unmanned Aerial Vehicle, is in the Area of Operations sending back streaming video to another screen. When the call to duty comes, the CFACC makes his call to strike and never worries about the supporting network enabling him to make that decision.

Headed up by the Air Force Communications Agency, Desert Falcon was a project designed to build an Alternate Air Operations Center at Al Udeid AB, Qatar. A team of network specialists from AFCA was tasked by U.S. Central

Command to do something that had never been done before: Engineer a network capable of supporting the 21st Century warfighter. This might not sound difficult for people who build networks for a living, but because of tensions in the Middle East, they had less than a year to accomplish the task. They also knew they would face some serious challenges. They understood they would have to work long hours in austere environments, work out of warehouses that didn't have power, and that they would be deployed away from their families for significant amounts of time.

"We knew we could do it," said Pat Katzer, team engineer. "We also knew deviating from the deadline was not an option because world events were setting the pace."

Katzer knew it could be done because she was involved with project Desert Shift. This effort involved building a Joint Intelligence Center, and an Air Operations Center at

Prince Sultan AB, Kingdom of Saudi Arabia. The objective there was to establish a combined AOC, improve coalition operations and restore theater forces; Command and Control, Intelligence, Surveillance and Reconnaissance capabilities as part of a larger project. The larger project, Desert Focus, consolidated Operation Southern Watch's combatant forces as part of the force protection initiative after the bombing of Khobar Towers.

"When we discussed putting together the network at Prince Sultan, the experts told us it would take five years," Katzer said. "When all was said and done, from conception to turning on the switch took the team only 18 months."

The design work, material selection and engineering planning for Desert Falcon took about four months. Katzer said satisfying the operators' concerns was the team's top priority. They knew operators would be basing life and death decisions on information coming over their networks, and anything less than perfection would not work.

The Air Force's Chief of Staff had a vision, and the team used his insight to guide them toward mission success.

"We are not interested in a fair fight," said Gen. John Jumper. "We want to put overwhelming technology into the hands of our warfighter."

The team first built a mock network at Scott to conduct testing. They reworked configurations and fine-tuned the equipment until it was running at peak performance. Once the mock-up was running to specification, the team took the validated configuration to Shaw AFB, S.C. to install equipment and conduct further tests.

The team recognized early on that designing and installing this network required individuals with specific training.

"We were lucky to have a few Desert Shift people on hand to work this project," said Angie Nettleton, Desert Falcon's project manager. "However, we did have some new faces in the group, and we needed to get them up and running in record time."

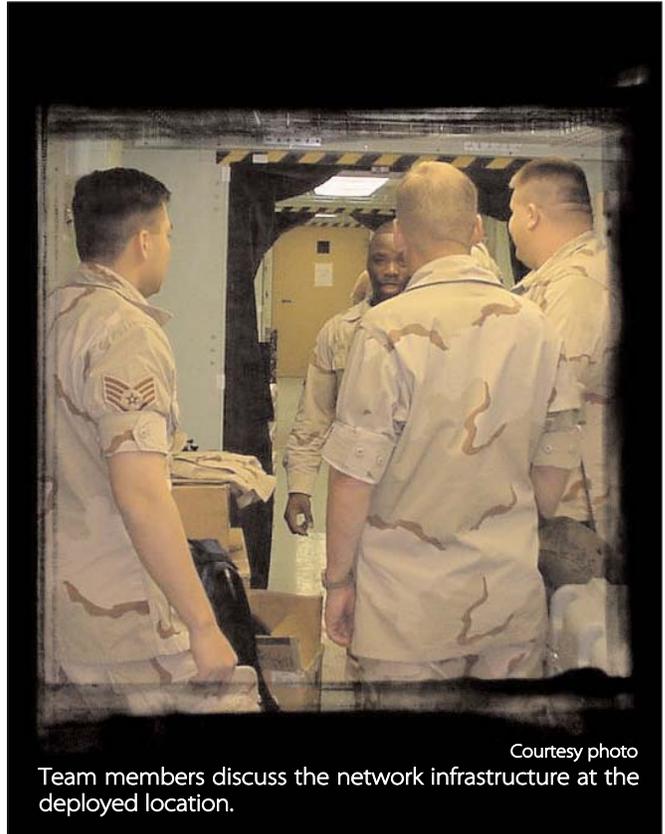
While testing was being conducted, teammates Captains Michael Radermacher and Jay Lee, were going to school to learn more about networks and the equipment.

"When I initially came on board with the team, I had never seen a switch or a router," Lee said. "We [Radermacher and Lee] went to school over the course of three months, and when we finally went TDY to Shaw and then deployed to Al Udeid Air Base, Qatar, we were 100 percent trained and ready to go."

## Heading out

With testing complete, the team headed east to bring its network to the warfighter. Aircrews told the team it would be better logistically to leave the equipment in racks and roll it

# Technical discussion



Courtesy photo  
Team members discuss the network infrastructure at the deployed location.

onto the plane. But, doing that was not an option.

"This type of equipment is not readily available off-the-shelf of a warehouse," Nettleton said. "If a component were to break, then the deadline for completion would be in jeopardy."

Team members took the time to break down core network components that would be re-installed in the desert.

"It was really awesome to see all this come together," said Rob Beutel, a civilian who deployed to the desert to get the network running. "This network exceeds all expectations. It's over engineered to the point where future operations are able to expand on the system without worrying about over taxing the network. It was a great feeling to put on the uniform and go downrange. We all pulled together to make this happen, and when we left, we knew the operators had a network that was going to get the job done."

## Into the box

The team arrived in Qatar in October to a network that had been unpacked and virtually set up. For more than a month, they worked off of generator power while the Red Horse and Air National Guard Engineering and Installation teams worked just a few steps ahead getting the infrastructure wired and architecturally ready.

"It was a really amazing team effort with people from ►►

# commitment to excellence



Courtesy photos

It took an orchestra of team work to accomplish the mission and meet the team's deadline. From the left: workers pull the network's cable. Center: Technicians configure the network. Right: A technician splices fiber optic cable.

organizations throughout the Air Force," Radermacher said. "The 609th Air Communications Squadron from Shaw unpacked our equipment, and the civil engineers structurally prepared the warehouses. Everyone was dedicated to making this happen on time, and without that support and teamwork, we would have never met our deadline."

By mid-October, the team had the network core services running. Core services are classified and unclassified e-mail, domain name services, and Internet access required for use by coalition forces.

The team turned over the controls to the AOC director in December and then accomplished the Initial Operational Capability certification.

"Senior leaders are now using huge projector displays to look at real-time video and intelligence reports," Katzer said. "Operators couldn't afford any lag time, and we worked many hours to make sure that didn't happen."

Radermacher explained how they worked through the lag problems.

"During early testing at Shaw, we discovered that when an operator clicked on an aircraft to get location, speed and other vital information, it would take more than two minutes to display. Through troubleshooting we were able to get that time down to mere seconds."

The Combined Forces Air Component Commander, Lt. Gen. T. Michael Moseley, recognized what communications specialists are bringing to the fight.

"Today's high-tech warfare is made possible by our amazing communications capabilities and people," Moseley said in Air Force Aim Points, a daily Air Force newsletter. "It's incredible how communications have transformed the way we fight wars. Communications gives us the capability to identify targets and direct strikes quicker and more accurately than ever before."

For their efforts, the Greater St. Louis Federal Executive Board recently awarded the Outstanding Team Performance Award to the Desert Falcon team during the 2003 Excellence in Government Awards Program. Team members Pat Katzer

and Rob Beutel received the Meritorious Civilian Service Award, and team lead Angie Nettleton received the Exemplary Civilian Service Award. Military team members have been submitted for awards; however, they have not been presented as of this date.

The Team AFCA Desert Falcon also received the AFCA Team of the Year Award for 2002.

## Where, Who



### AFCA Desert Falcon team members are:

- Angie Nettleton, project manager
- Lt. Col. Craig Miller, deployed team leader
- Capt. Michael Radermacher, technical team lead
- Patricia Katzer, technical team
- Capt. Jay Lee, technical team
- Rob Beutel, technical team
- Staff Sgt. Frank Muccio, technical team
- Julie Reynolds, administrative lead



# East meets West

## TACC opens new ops center, realigns missions

By Tech. Sgt. Mark Diamond

Air Mobility Command Public Affairs

**SCOTT AIR FORCE BASE, Ill. —** After a year of planning and six months of renovation, the Air Force's newest air operations center opened for business here May 8.

On the surface, the new Tanker Airlift Control Center command and control complex is a picture of modernization merged with design. However, AMC officials said the renovation isn't all about appearances.

"The TACC renovation is the continuation of the constant transformation of the command and control business of Air Mobility Command," said Gen. John W. Handy, commander, U.S. Transportation Command, and commander, Air Mobility Command.

"The people of this command, and the people working in this room today, are the real reason this function works so well," Handy said. "[The TACC operations center] is an incredible capability when you think about all the airlift, air refueling and aeromedical evacuation missions that are running anywhere in the world at any given

time, 24 hours a day, seven days a week. The command and control and in-transit visibility of all of those assets are run right here through the TACC. Just 10 short years ago we started this dream, and it continues today."

The renovation also adds capabilities to TACC operations, said Maj. Gen. Edward LaFountaine, TACC commander.

"The new TACC is an improved way to bring all [TACC] functions together, whether it's our flight dispatchers, our flight controllers, our weather personnel, our intel specialists, or our logisticians who handle maintenance recovery of broken airplanes. The new operations center brings them all together in a working community to optimize air mobility operations.

"[TACC personnel] now have the ability to call upon a wide range of electronic tools and databases to help them make smart decisions in a timely manner and help them make decisions that optimize mobility assets around the world," LaFountaine said.

According to Senior Master Sgt. Robert Dunn, superintendent of the TACC Operations Support Division, the TACC is already reaping the benefits of both the physical renovation of TACC as well as the transformation of air mobility operations.

He said one of the more significant changes was the reorganization of the

operations center from a geographical division to functional division.

"As part of the effort to create a more efficient and effective TACC, we got rid of the east-west divisions," Dunn said. "The TACC is now divided into functional areas, or mission types, which gives us the flexibility to manage our manpower based on our actual workload rather than by the location of each mission."

The functional division created immediate manpower efficiencies.

"We've seen days where the east side was working maybe 1,000 sorties, while the west side was working only 300. The east-side guys were working very hard, while the other half of our crew had a manageable workload," Dunn said. "By dividing the operations center by function, rather than by hemisphere, we can adjust the number of people to each type of mission (i.e., contingency, airlift, air refueling, special airlift, channel missions, and so forth). Basically, I can adjust my manpower and even out my workload every day and during every shift."

This renovation will ensure that TACC's capabilities reach well into the 21st Century because the continuous perfection and transformation of AMC air mobility operations is what really drives the TACC mission.





MDB 1: 55  
CRIT GBO: INACT  
IN GBO: INACT  
OUT GBO: INACT  
LOWALT: 0

ADSI helps operators avoid the

# BLACK HOLE

**By Chuck Paone**

Electronic Systems Center Public Affairs

**HANSCOM AIR FORCE BASE, Mass.** — Iraqi war theater air battle commanders saw, in real time, an up-to-date view of nearly all combat operations happening at any given time thanks to the Air Defense Systems Integrator.

Developed by the Electronic Systems Command, ADSI provided a comprehensive picture the Combined Forces Air Component Commander could rely on because it receives, processes, converts and displays various tactical data streams, according to Steve Brown, Tactical Data Links System Program Office ADSI program manager.

“The CFACC has to see not one but three different country-sized areas, where all the blue (United States and coalition) forces are, where all the red forces are, and all the missions in the air,” Brown said.

ADSI helps make that happen by receiving and converting, to a common language, feeds from intelligence-gathering devices, radars and a dozen different types of tactical data links.

Although this is invaluable to the CFACC, who operates from a Combined Air Operations Center, or CAOC, from which the air war is ultimately coordinated, Brown said it’s essential to others, too.

“There were more than 70 ADSIs in and around Iraq supporting the war,” he said.

There are so many ADSI systems because it allows various systems that often aren’t interoperable, said Lt. Col. Anthony Cerveny, chief of the TDL Program Office’s Gateways Division. He said the ability to translate from one system to another is critical.

That means not just Air Force, but for the sister services too. Pentagon leaders have, in fact, cited it as among “the most joint” of all Defense Department systems.

Not only does each of the services use ADSI, but the system also boasts a long list of international users, including Canada, the United Kingdom and Australia. Within the United States, the U.S. Customs Service uses the system, and

it was also used to help protect the 2002 Winter Olympics in Salt Lake City.

One example of how ADSI worked involved assisting a forward-deployed Marine unit in the Iraqi theater that was working to support CFACC requirements. The unit needed the interoperability of radar and intelligence feeds that only ADSI could provide, said 2nd Lt. J.J. McAfee, ADSI project manager.

To respond rapidly, ESC-assigned contract engineers deployed to the war theater and installed and integrated ADSI with the Marine Air Control Squadron’s Tactical Air Operations Center. While ADSI would provide the needed solution, some

custom engineering was still required.

“We had the Marines up and running in five days,” McAfee said.

“That involved getting it installed and aligned to interface with a

new piece of equipment it had never operated with before. We also had to train the Marine Corps operators, most of whom had never operated ADSI before.”

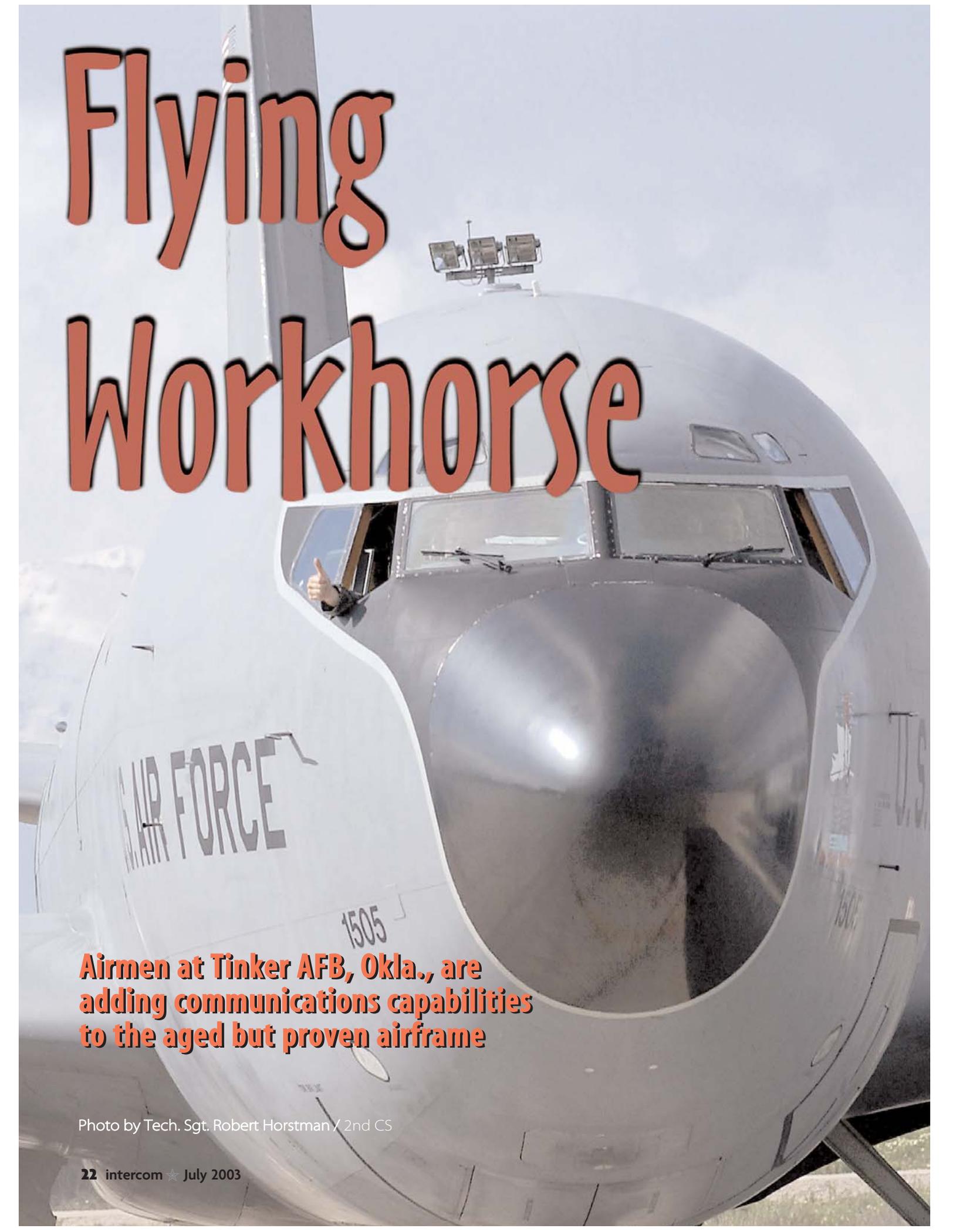
Team members also integrated ADSI with the Predator and Global Hawk unmanned aerial vehicles, providing enhanced situational awareness for the operators of both.

“Flying in a remote area, an operator doesn’t know what’s around the UAV,” Brown said. “So now he knows where the blue forces are, where the red forces are, where the [surface-to-air missile] sites are that can shoot it down, and he can steer away from them.

“Additionally, he can investigate tracks on his own, because he now knows he’s safe to move in a certain area. Before this war, he couldn’t do that. He had to stand off at a safe distance.”

“Flying in a remote area, an operator doesn’t know what’s around the UAV.”

Steve Brown  
Program Manager



# Flying Workhorse

**Airmen at Tinker AFB, Okla., are adding communications capabilities to the aged but proven airframe**

Photo by Tech. Sgt. Robert Horstman / 2nd CS

By Maj. Rich Curry  
507th Air Refueling Wing Public Affairs

### TINKER AIR FORCE BASE, Okla.

— While predominantly known as a flying gas station, the KC-135 aircraft has flown as a flying command post, an observation platform in compliance with the Open Skies Treaty, a zero gravity simulator and even more recently as a flying hospital.

In addition to maintaining its air refueling capability, this flying workhorse will soon add communications relay station to its capability list. With the installation of ROBE, or Roll-On Beyond-line-of-sight Enhancement equipment, the Stratotanker will be equipped with the capability to facilitate point-to-point data streaming of information while conducting its primary mission of air refueling.

“One of the goals for Air Force transformation is the better integration of military assets,” said Lt. Gen. John Baker, Air Mobility Command vice commander. “The smart tanker concept, which expands the air-refueling mission by including an additional role as a communications platform, is a perfect fit. We directed this transforma-

tion effort to increase the use and effectiveness of our tankers because they are always in the area of operations refueling fighters, bombers and intelligence, surveillance and reconnaissance assets in support of the joint forces commander. The AOR is a place where moving critical information is crucial to rapid targeting and enhancing the situational awareness of our aircrews, regardless of military service.”

The ROBE system is roughly the size of the 2-foot-by-4-foot galley already in the tanker and is strapped to the floor of the aircraft similar to any other pallet. ROBE is the first in a family of Scalable, Modular, Airborne Relay Terminals that will be used aboard tankers. The SMART system could also be used on other platforms, such as unmanned and ground- or sea-based vehicles, said officials at the Air Force Command and Control and Intelligence, Surveillance and Reconnaissance Center at Langley AFB, Va.

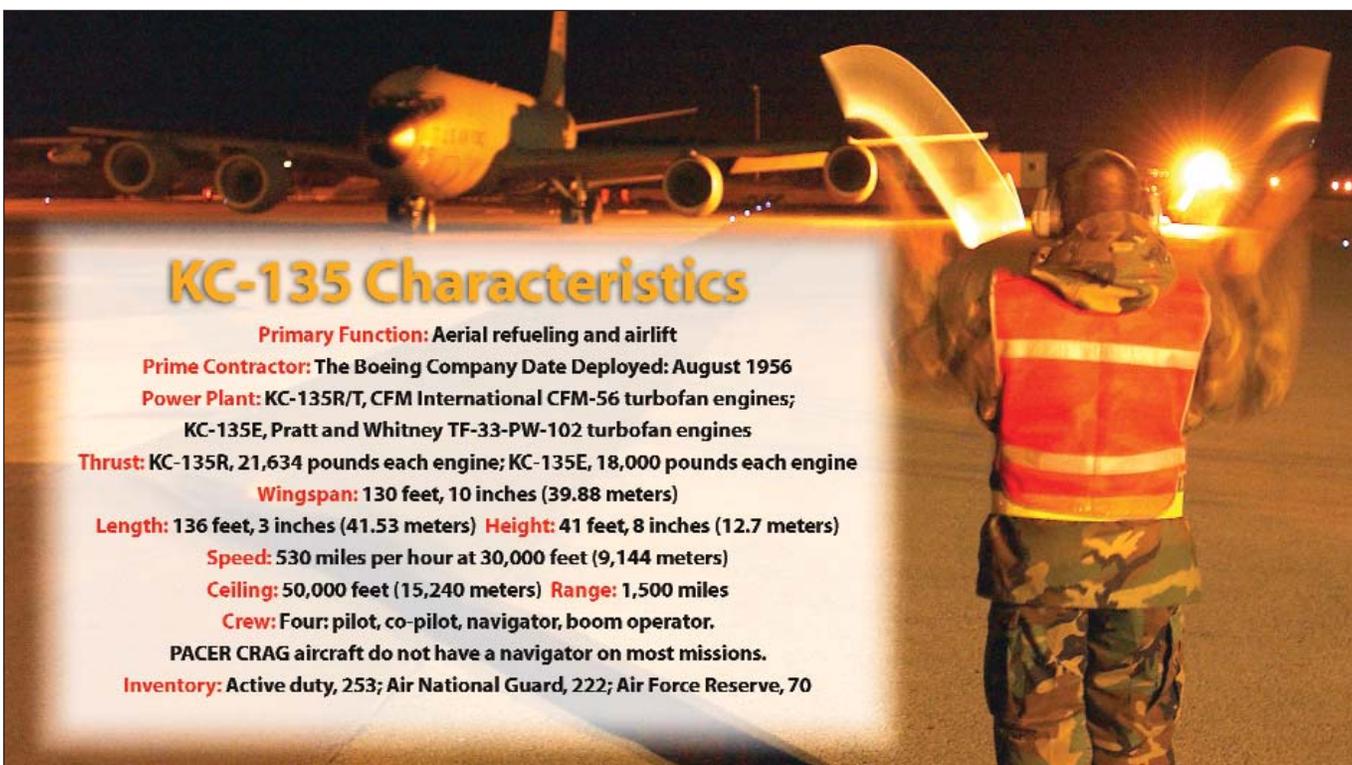
Initially ROBE will be a data relay that will allow line-of-sight/beyond-line-of-sight communication among network members. Officials said the objective is to connect battle directors

in an air and space operations center with those en route to or in a theater of operations.

As seen in Operation Iraqi Freedom, information superiority is as important as air superiority. Making rapid, accurate battle decisions requires up-to-the-second information.

“If you’re doing any combat operations, guess who’s always going to be there? Our tankers,” Baker said. “If we put a ROBE system on our tankers, knowing they will always be there, it will provide that over-the-horizon capability we need. The ROBE system will boost a signal to and from every friendly force in the theater, whether it’s a Joint STARS, AWACS, F-16, F-22 or even aircraft carriers, without using a satellite.”

But make no doubt about it, Baker said, “A tanker will always be a refueler. It will only be tasked to do refueling. All the discussion regarding ROBE is that it will have zero impact on our refueling missions. The ROBE capability is just something to be placed on the aircraft that will be transparent to the crew. Our refueling aircraft are too valuable to park out there (in orbit) and only use as relay platforms.”



## KC-135 Characteristics

- Primary Function:** Aerial refueling and airlift
- Prime Contractor:** The Boeing Company **Date Deployed:** August 1956
- Power Plant:** KC-135R/T, CFM International CFM-56 turbofan engines;  
KC-135E, Pratt and Whitney TF-33-PW-102 turbofan engines
- Thrust:** KC-135R, 21,634 pounds each engine; KC-135E, 18,000 pounds each engine
- Wingspan:** 130 feet, 10 inches (39.88 meters)
- Length:** 136 feet, 3 inches (41.53 meters) **Height:** 41 feet, 8 inches (12.7 meters)
- Speed:** 530 miles per hour at 30,000 feet (9,144 meters)
- Ceiling:** 50,000 feet (15,240 meters) **Range:** 1,500 miles
- Crew:** Four: pilot, co-pilot, navigator, boom operator.
- PACER CRAG aircraft do not have a navigator on most missions.**
- Inventory:** Active duty, 253; Air National Guard, 222; Air Force Reserve, 70

# AFCA civilian employee finds success with year-long career broadening experience

By Master Sgt. Karen Petitt  
Intercom Managing Editor

**SCOTT AIR FORCE BASE, Ill. –** Mikele Bowman's view from the 15th floor of a gray cubicle office in downtown St. Louis where she worked for the past year may not be as grand as she would like—one must climb to the 40th floor for that. But, the view wasn't what she was looking for when she headed there last year to work in the private sector in an effort to broaden her career by participating in the Air Force's Education With Industry program . . . and she did just that in ways she never imagined.

Bowman had been working in Air Force Communications Agency for 4 1/2 years after spending three years here as a Palace Aquire intern. Because she had never been exposed to private industry, she thought EWI would provide her the opportunity to explore and at the same time develop additional skills to become a better Air Force employee. However, there was a glitch. The only industry participating in EWI at the time would require at least a two-hour commute each way, and for her that was impractical. So, because civilian employees in EWI are not allowed to PCS for the program, she began looking for an industry partner closer to home. Her husband happened to work at SBC, the nation's second largest regional telephone company, with more than 170,000 employees throughout 13 states. Along with telephone lines, they also provide a full range of voice, data, networking, and e-business services and partners with several different companies worldwide.

SBC agreed to participate and are so impressed with Bowman and what she brought to their company that they're looking to interview two more civilian employees from AFCA for the next year.

"From day one, Mikele brought value to our business," said Tony Weaver, an SBC senior project/program manager and Bowman's first team leader. "She was able to move some of our more complex projects along, which really helped us. We had her as an additional resource who basically came in a 'plug-in and play mode.' To have someone of her caliber jump right in and be that right fit for our company, who didn't need supervision, made her a great asset to us . . . and has made us want to continue our partnerships with the Air Force in this area."



Master Sgt. Karen Petitt / AFCA Public Affairs

Bowman served the company as an Information Technology project/program manager where she worked with clients to development IT services that met their mission critical business needs. She evaluated and planned initiatives, and directed those projects from design and development to test and implementation.

"Working here has made me grow as a person in so many ways," said Bowman. "SBC welcomed me with open arms and really let me be involved in the process and have some significant responsibility. I now realize how the private industry is so different than the government. It was culture shock at first, and we (she and the company) both needed interpreters to work through the language barrier of acronyms. I also learned how people are able to adjust in an economy that's sluggish and that you just have to be flexible . . . I'm no longer 'afraid' of being 'out there' in the economy."

As she prepares to head back to AFCA, she said the one thing that has stayed constant in her mind is to constantly stay on top of the information and technology explosion that is happening, otherwise "you'll be left behind."

She said she hopes to bring that back to the Air Force for the next three years, which is the time required after completing the EWI program. In some cases, the Air Force will release one from the obligation for a \$17,000 buy-out, an option Bowman said she thought about negotiating. In the end, she decided to return to AFCA and apply for positions where her skills will be best used. She may end up on the second floor with a great view of the parking lot, but it's really not the view that matters.

# Aircrews donate items to help museum tell OIF story

Time  
Machine

By Tech. Sgt. Carl Norman

AFMC Public Affairs

**WRIGHT-PATTERSON AIR FORCE BASE, Ohio**— Several military members here started an Operation Iraqi Freedom section in the Air Force Museum by donating items they used on OIF missions to be put on display for generations to come.

Retired Maj. Gen. Charles Metcalf, museum director, invited aircrews from Pope AFB, N.C.; Ellsworth AFB, S.D.; McChord AFB, Wash.; and McConnell AFB, Kan., to a brief ceremony at the museum so their donations can allow museum experts to continue telling the Air Force story.

It's also one of many Air Force undertakings as part of Operation Tribute to Freedom to make sure the American people recognize members of the armed forces at home and abroad for their accomplishments and sacrifices in the Global War on Terrorism.

Lt. Col. Raymond Strasburger, 75th Fighter Squadron operations officer at Pope AFB, N.C., and OIF A-10 pilot, donated a desert flight suit, desert boots, dog tags, squadron patches, a mini flash light he said came in very useful on OIF missions and an American flag he said flew with him. He also presented, on behalf of 1st Lt. John Blocher, an A-10 pilot who served as a battalion air liaison officer with the Army's 3rd Infantry Division, a map of Iraq and a forward air controller kit he used to call in air strikes on Baghdad. Following the A-10 presentation, a B-1 Lancer crew from the 28th Bomb Wing from Ellsworth AFB, S.D., donated flight suits, a squadron coin, a pin removed from bombs being dropped on Iraqi targets and squadron patches. The crew was awarded the Distinguished Flying Cross for striking a target of opportunity April 7 in Baghdad believed to be a meeting of senior Iraqi leadership.

**People wishing to donate items to the Air Force Museum should call Krista Strider, chief of collections at 937.255.2597 ext. 720 or Terry Aitken, 937.255.7204 ext. 337. The DSN prefix is 785.**

Operation Tribute to Freedom

**Education & Training**

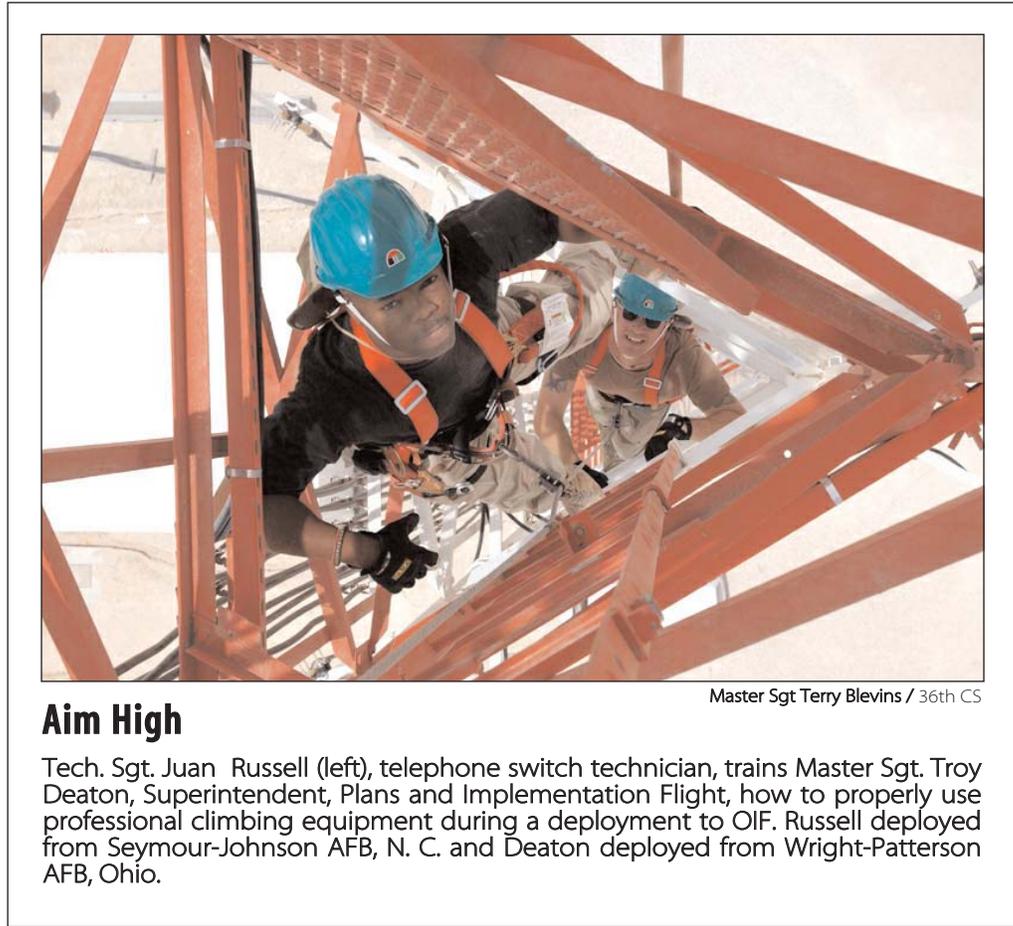
**JOINT C4I COURSE:** If you're an action officer or senior NCO supporting signals intelligence, space operations, or theater command and control initiatives, or if you are a C4I project manager, action officer or DoD civilian who deals with a myriad of interoperability issues/key performance parameters in the C4ISR transformation arena, then you may be interested in the Joint Command, Control, Communications, Computers, and Intelligence Staff and Operations Course.

The JC4ISOC is four weeks long, taught six or seven times during the fiscal year, and is sponsored by the Joint Staff. JCIWS' mission is to educate and train company and intermediate level military staff officers, senior NCOs, and DoD civilian equivalents in the concepts, applications, and procedures associated with C4I and Information Operations in a joint and multinational environment. First established in January 1978, it is one of the resident courses under the Joint Command, Control, and Information Warfare School, Joint Forces Staff College in Norfolk, Va.

The course provides instruction on topics such as Joint Vision 2020, joint interoperability, battle-space systems, Global Information Grid, information assurance and JTF C4I planning.

The course accommodates a maximum of 25 students, and there's one available course date for this fiscal year: Aug. 4-29. Students must possess a Top Secret/SCI clearance and be cleared for SCI indoctrination before arrival. Students' commands must fund their own travel, per diem and billeting, which includes a five-day field trip to the Washington, D.C. area for "up close and personal" experiences with joint C4I agencies and organizations.

Administrative information is available through the "Welcome Aboard" and "General Information" sections of the JFSC web site at: <https://www.jfsc.ndu.edu/> (click on



Master Sgt. Terry Blevins / 36th CS

**Aim High**

Tech. Sgt. Juan Russell (left), telephone switch technician, trains Master Sgt. Troy Deaton, Superintendent, Plans and Implementation Flight, how to properly use professional climbing equipment during a deployment to OIF. Russell deployed from Seymour-Johnson AFB, N. C. and Deaton deployed from Wright-Patterson AFB, Ohio.

the JCIWS link). Air Force faculty representatives are Lt. Col. Keith Phillips, DSN: 646-6329, or Maj. Bryon Scott, DSN 646-6328, or commercial (757) 443-6329 and 6328.

**PROGRAMMER HELP:** Airmen are improving their programming skills with help from experts called in from Auburn University at Montgomery by Standard Systems Group officials at Maxwell Air Force Base, Ala. Standard Systems Group manages information technology contracts and standard information system programs commonly used at all active and Reserve Air Force bases and Defense Department agencies.

Airmen lacking leading-edge technology skills are partnered with AUM to quickly get up to speed. The five-month program, managed through AUM's department of information systems and decisions sciences, was customized to prepare for SSG's Java Center of Excellence opening. The center substantially improves the way the group delivers

software solutions to the Air Force.

The result combines lecture and lab work in a condensed program offered to 64 programmers. Each student is required to take an object-oriented design fundamentals course, two courses in programming languages and two courses in Oracle database. The airmen are considered full-time AUM students and earn 15 credit hours. Eventually, all new enlisted computer programmers will go through this training. *(Belinda Bazinet, Standard Systems Group Public Affairs)*

**AUGUST CONFERENCE:** The 2003 Air Force Information Technology Conference happens Aug. 24-27 at the Montgomery Civic Center near Maxwell AFB, Ala.

Government and industry leaders will present more than 260 seminar sessions at the conference, and the exhibit floor will showcase the latest in information technology from various corporations

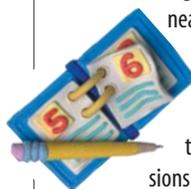
including Dell, GTSI, Microsoft and Micron.

Scheduled keynote speakers include Steve Ballmer, Microsoft Corp. chief executive officer; John Stenbit, assistant Secretary of Defense; John Thompson, Symantec Corporation CEO; and Ted Waitt, chairman and CEO of Gateway Inc.

Standard Systems Group officials at Maxwell said AFITC 2003, "Transforming the Air Force for Network-Centric Warfare," is designed for computer users, developers and managers from across the Air Force who identify and define requirements for information technology capabilities of tomorrow. Anyone interested in attending can register on line at <https://web1.ssg.gunter.af.mil/afitc>. For more information, call DSN 596-4319; or commercial (334) 416-4319.

**New developments**

**IT COMMODITY COUNCIL**— The Standard Systems Group experts at Maxwell AFB, Ala., will now develop Air Force-wide strategies for buying



and managing information technology products as they assume their role as head of the new Air Force Information Technology Commodity Council. The AFITCC includes representatives from across Air Staff and Air Force major command staffs.

"SSG is the ideal place to form the nucleus of the Air Force's IT Commodity Council," said Ken Heitkamp, newly appointed IT Commodity Council director. "The IT, integration, standardization and enterprise-wide mission support for the Air Force are found at SSG."

Once the strategies are approved and contracts are in place, Air Force users will maintain the decentralized flexibility to order what they need, when they need it through AFWay, a web-based Air Force system for purchasing commercial, off-the-shelf information technology.

The commodity council stood-up in mid-June and operates on a daily basis using collaboration tools through the Air Force Portal and virtual meetings. The group will first focus on desktop and laptop computers and then IT peripherals. He said buying strategies will eventually be formed for everything dealing with commercial IT.

The Standard Systems Group provides and sustains combat support information systems for the Air Force and Department of Defense. The group procures leading edge information technology products used by virtually every organization on Air Force military bases worldwide. (AFMC)

**INCREASING THE BANDWIDTH:** The Department of Defense is planning to beef up Internet access at 92 military installations by the end of fiscal 2004 as part of the Global Information Grid bandwidth expansion project. A little over a third of those installations will be Air Force bases, especially the ones overseas.

Bandwidth is a term used to describe the amount of information that can be transferred over a network. Networks made of copper wire, such as telephone lines, are considerably slower than those made entirely

of fiber-optic cable.

The purpose of the expansion project is to get enough fiber-optic connections to the selected bases to support a transmission rate of about 10 gigabits per second. In practical terms, this means the bases will get a transmission rate of almost two CD-ROMs' worth of data per second. DoD will buy fiber-optic cables that are already in the ground. Another part of the project is ensuring those 92 bases are wired for redundancy. At some locations today, there may be only one line providing Internet capability to an entire installation. If for some reason that line were severed, the entire base would lose connectivity. The expansion project will ensure bases have multiple points of entry for network connectivity. (Staff Sgt. C. Todd Lopez, Air Force Print News)

**COPS TEST NEW PDA:** A new Personal Data Assistant for security forces personnel that Air Force Materiel Command experts developed is on a 120 day test at Wright Patterson AFB, Ohio.

The PDAs can provide on-the-spot base barment, visitor access lists, base driving directions and privately owned weapons listings for security forces members who need this information

at the touch of a button. Also available on the PDAs are the SF Operating Instructions, post briefings as well as DUI testing procedures and recall rosters.

"There's even the capability for a visitor to pull up to the gate and receive printed directions for their destination by knowing either the building number or the name of the organization," said Michael Barry Handheld Business Solution manager. And, there's a special program called Defensor Canine, for the Military Working Dog section, which will help shorten administrative office procedures.

Security forces members assigned to vehicle patrols, gate guard duty and bicycle patrols will all use the new PDAs, which cost about \$300 each. The PDA package comes with a stylus and a belt attachment that police can carry while on duty, including a forearm attachment when they're on bicycle patrols. (2nd Lt. Michael Varaly, AFMC Public Affairs)

#### **ID TECHNOLOGY SPEEDS WORK:**

Warner Robins Air Logistics Center employees recently saw how much easier their jobs could be in the future as representatives from CDO Technologies demonstrated automat-

ed identification technology capabilities. AIT promises to cut down the time it takes Air Force Materiel Command's air logistics center workers to do many things like locate parts in a warehouse, fill out necessary documents for a job and even track work on a particular project.

For example, a door to the bin is locked and people have to take time to unlock it before getting tools. With the AIT, the door releases when it receives a signal from the host computer. After the maintainer removes the needed item and closes the door, a switch automatically relocks the door.

Other demonstrations included speech recognition and hand-held bar code scanners. Those who must deal with items located in a large warehouse might find radio frequency identification useful. With RFID technology, operators can remotely identify, categorize and locate material automatically within relatively short distances. (Lisa Mathews, Warner Robins Air Logistics Center Maintenance Directorate)

**EGLIN'S KINETIC PAYLOAD:** Eglin AFB, Fla., munitions experts recently gave America's warfighters a new weapon that destroys targets with kinetic energy rather than explosives, ►►



Staff Sgt. Dawn Bolen / AFPN

## **Hiding Place**

Staff Sgt. Pablo Torres protects himself from an enemy attack during an exercise May 13 at Langley AFB, Va. Torres is a graphics artist with the base's 1st Communications Squadron.



Staff Sgt. Tony Tolley / 48th CS

## Hooked Up

Senior Airman Michael Doherty (left), a ground radio communications journeyman, and Staff Sgt. Mitchell Mason, wideband satellite journeyman with the 321st Expeditionary Communications Squadron, adjust an antenna guy rope on a Very High Frequency 60-foot mast at a forward-deployed location for Operation Iraqi Freedom.

and they had the initial capability available a mere 98 days after receiving the request.

The Passive Attack Weapon houses various sizes of penetrator rods inside what Dr. John Pletcher, Area Attack Weapons Systems Program Office technical director called a "large water heater with fins." Guided by a Wind-Corrected Munitions Dispenser tail kit to help with accuracy, the munition's full production of weapons was completed in 180 days, a feat Pletcher said normally takes years.

"They way the PAW works is after being dropped from an aircraft, the weapon's outer skin separates at a preset altitude, allowing the individual penetrator rods to free fall to the earth and penetrate their target," Pletcher said. "With this munition, there is no explosive warhead and

minimal collateral damage." He said the new weapon is designed for use in an environment where warfighters need to disable a target without destroying its surroundings. Some examples include storage facilities, fuel storage depots, power substations or antenna fixtures. Although the program was a success, officials said there is nothing in the way of a follow-on program immediately coming from the Air Force. (*Senior Airman Ryan Hansen, Air Armament Center Public Affairs*)

### Personnel issues

**SPLIT DISBURSEMENT:** All military travelers must now select the split disbursement option on their travel voucher claims to directly pay their government travel card expenses,

according to finance officials.

Split disbursement requires travelers to tally up their GTC expenses and authorize enough funds to be sent automatically to Bank of America to pay off their charges. Any remaining travel settlement will still be sent to the traveler's personal account. Nearly half of all Air Force travelers already use split disbursement on a regular basis. By having all travelers pay off their travel card bills automatically, the Air Force should see a decrease in the number of delinquent accounts. This is especially true when travelers return from a TDY as a billing cycle is about to turn over, because they can pay off the card before their account becomes 30 days past due. If travelers charge more to their GTC than they were authorized, they still must select split disbursement and also reimburse the bank any additional charges, he added.

Supervisors and approving officials are required to verify travelers selected split disbursement before signing off on vouchers. If split disbursement is not selected on a voucher, it will be returned to the traveler to be redone, which may delay the processing of the claim and potentially put the traveler's GTC account into a past-due status. Split disbursement is not yet mandatory for civilian employees. (*AFPN*)

**AF EASES STOP-LOSS:** Air Force personnel officials announced May 14 the release of more than half of the Air Force specialty codes restricted from retirement or separation May 2 under the Stop-Loss program. Following a review of operational requirements, 31 officer and 20 enlisted career fields were released from Stop-Loss, the officials said.

The officer career fields released are: 11BX, 11EX, 11FX, 11HX, 11KX, 12BX, 12EX, 12FX, 12KX, 12RX, 12TX, 13BX, 13DXA, 13DXB, 32EX, 43EX, 43HX, 43TX, 44EX, 44MX, 45AX, 45BX, 45SX, 46FX, 46MX, 46NXE, 46SX, 48AX, 48GX, 48RX and 51JX.

The enlisted career fields released are: 1C2XX, 1C4XX, 1S0XX, 1T1XX, 3E000, 3E0X2, 3E4X1, 3E4X2, 3E5X1, 3E7X1, 3E8X1, 3E9X1, 3H0X1, 3N0XX,

4A1XX, 4A2XX, 4B0XX, 4E0XX, 4H0XX and 5J0X1.

The Air Force announced Stop-Loss, a Defense Department program designed to retain members of the armed forces beyond their established dates of separation or retirement, for 99 specialties and deployed airmen on March 13. The move was aimed at ensuring personnel levels were adequate to meet upcoming contingencies.

Air Force Chief of Staff Gen. John P. Jumper said that service officials have always said they will use Stop-Loss only as long as necessary to accomplish the mission.

"We've re-evaluated our requirements and are releasing these AFSCs because Stop-Loss is inconsistent with the fundamental principles of voluntary service," Jumper said.

Deployed active-duty, Guard and Reserve airmen whose specialties are released from Stop-Loss will not be allowed to retire or separate until their deployment is completed. Air reserve component airmen who are mobilized, but not deployed, will be demobilized according to ARC policy. The actual "termination" of Stop-Loss has yet to be determined because Air Force officials and combatant commanders still need certain skills to directly support the war in Iraq. (*AFPN*)



Staff Sgt. Thomas Thorpe

**General Dynamics' technician Jeff Tillison works next to Network Control Center technician Airman 1st Class Nicole Perez and Tech. Sgt. Vincent Freeny.**

### BUCKLEY INSTALLS NETWORK:

There's been a lot of digging going on at Buckley AFB, Colo., as communications personnel and contractors lay the groundwork for the Combat Information Transport System, an Air Force directed program that



## Boot up

Master Sgt. William Drawbond and Tech. Sgt. Kevin Peters, 52nd Communications Squadron, use computers to connect network e-mail service, during the Exercise "Lions Wrath" at a deployed location in Oberweis, Germany.

awaited service to those in Iraq serving their country.

They will continue to work hard until the time comes for them to return home. (A1C Lowan Anderson)

**DoD HONORS SCIENTIST:** Saving the Air Force \$5 million during a three-year period helped a senior computer scientist at Rome Labs earn the 2003 Department of Defense Value Engineering Award.

Helen Rico earned the award, which acknowledges exemplary achievements and encourages additional projects to improve in-house and contractor productivity. Rico, a 30-year federal government employee stationed in Rome, N.Y., was selected as the Air Force recipient in the individual category.

She was cited for her efforts to reduce costs associated with research and development program documentation, automated data processing equipment inventories and research and development software license and hardware acquisition. A native of Rochester, Rico holds a bachelor of science degree in computer science from Utica College of Syracuse University and was awarded a master's in human resources from the State University of New York Institute of Technology at Utica-Rome. She is pursuing a master's in business administration at the Institute of Technology. She received her award plaque during June 18 ceremonies at the Pentagon. (AFMC)

installs high-speed, broadband and digital networks.

Work began at Buckley in March on the \$7.8 million program when the contractor, General Dynamics, began installing 85,000 feet of conduit, 28 manholes and more than 150,000 feet of fiber optic cable — 62 buildings on the base were affected.

General Dynamics recently marked a project milestone by installing new network switch equipment in communications rooms around the base.

The new network capabilities will provide base users faster network connection speeds, increased data transfer capability, more reliable service and fewer unscheduled network interruptions. The network replaces older, obsolete network equipment. NCC technicians, telephone systems maintenance personnel and the plans and programs flight office from the 460th Communications Squadron oversaw the installation and accepted the new network. When it's completed and base personnel are on the Internet, downloading files or performing general duties and say, "Wow that was fast!" they'll be sure to think of the people who contributed to the CITS project and the mission of the 460th Communications Squadron. (Steven Keuper, 460th CS)

## KUDOS

**TALLIL MORALE CALLS:** Thanks to the efforts of the 5th Combat Communications Group deployed from Robins AFB, Ga., to Tallil Air Base, Iraq, more than 1,000 service members flock daily to two morale tents to use computers or telephones to keep in touch with loved ones back home. The service is open 23 hours a day and a team of 22 work two shifts to make the operation run smoothly. Many people express their gratitude for the opportunity to speak to family members, as they have spent several

months deployed without any contact. The service is so popular that troops from as far as the Baghdad vicinity drive down just to make a 10 minute phone call back to their families.

When not servicing the phone lines for the morale calls, the team acts as a central focal point for resolving communication problems. They are also the first line of resolution for computer and network problems. With the combined help of the NCC, Voice, Radio, and Satellite shops also deployed there, they have continued to provide a welcomed and long



Courtesy photo

## Quick Response

Members of the 206th Combat Communications Squadron reposition comm equipment during the Tandem Thrust 03 exercise in the Marianas Islands. The 206th CS is an Air National Guard unit stationed at Elmendorf AFB, Alaska.

# Talk to the hand

## Cutting-edge technology provides speedy access

### What is it?

This device maps the shape of a person's hand using more than 90 measurements, which is then used to authenticate a person's identity. Biometric devices such as the handkey or eye scan have been around for awhile, but they've not been used on a large scale within the Air Force.

### Types:

The Air Force has chosen a handkey manufactured by IR Recognition Systems. It can be used for gaining access to buildings, thus eliminating the need for access cards or a security forces person. It's wall mounted and also has a covering for outdoor use.

### How does it work?

The machine takes geometric readings of a person's hand—size, length, thickness and surface area; it doesn't record handprints or fingerprints. Instead, it creates a three-dimensional model that's coded mathematically and stores it in the computer's memory. Each time a hand is placed on the machine, the information is automatically updated. For instance, if a person gains or loses excessive weight, or if the hand becomes scarred or disfigured, the geometry of the hand is updated. Each person will punch in the last six numbers of their Social Security Number before placing their hand in the machine, which is in part, how the machine will be able to recognize and update the information.

### What's the Air Force doing with it?

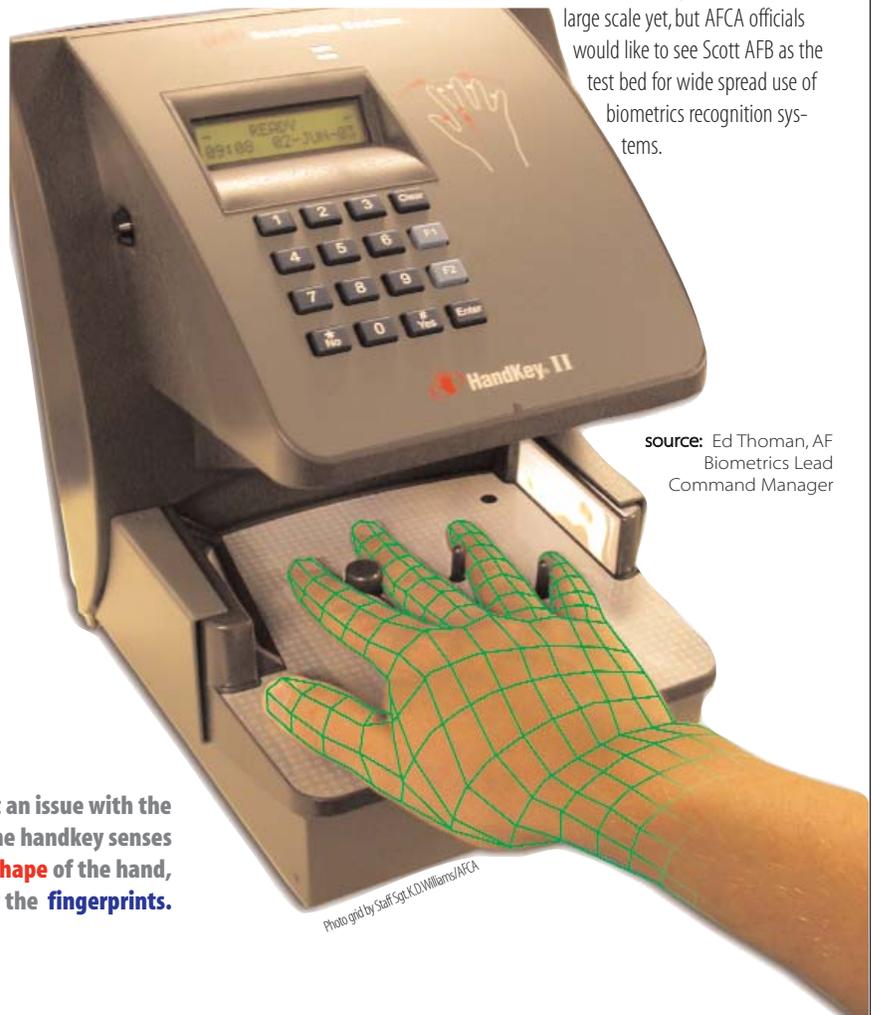
The Air Force Communications Agency has been the lead command for this project and has worked with

security forces members from Lackland AFB, Texas, and Aviano AB, Italy, to install the reader for building access. These have been done as "quick assessments" and involved testing about 125 people at a time. AFCA has also installed the reader in its building as part of the quick assessment study. On a much larger scale, the agency recently worked with Scott's SF unit in June to provide the reader for access to one of its gates so a police person wouldn't have to stand guard 24/7. This is the gate where a new Metrolink section opened, which provides train transportation from Scott AFB to downtown St. Louis and onto Lambert Airport. Instead of 125 users, this item will

provide access to literally thousands of people. The active duty, reserve and civilian rosters from people assigned to Scott AFB are built into the system's initial database, and it takes about 30 seconds to get the hand scan loaded into the system. This system of access will only be used during normal security threat conditions.

### What's ahead for biometrics?

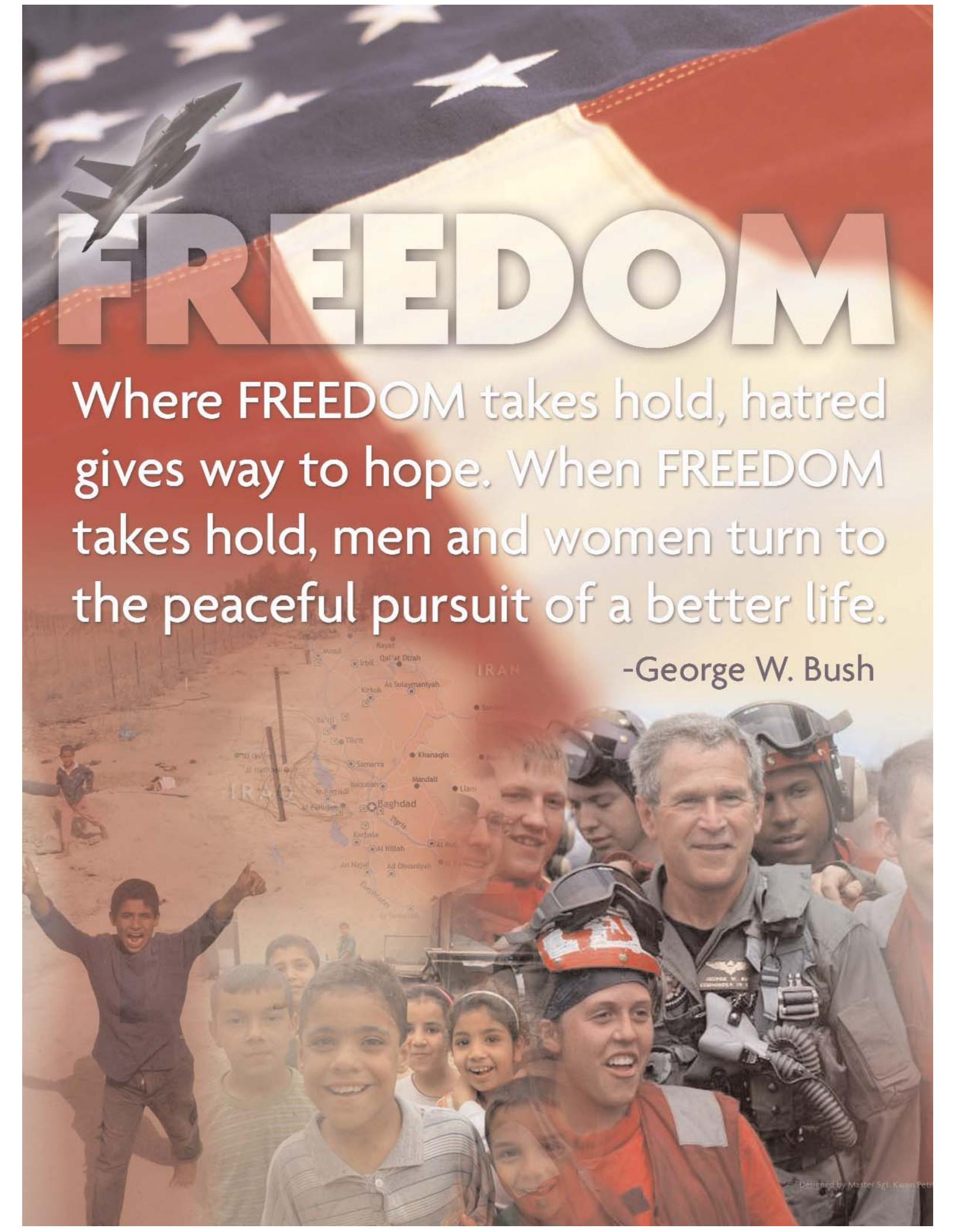
AFCA is working with AF Special Operations Command in working with an iris scan, which is used for a more secure level of identification authentication. The Air Force is not working biometrics on a large scale yet, but AFCA officials would like to see Scott AFB as the test bed for wide spread use of biometrics recognition systems.



source: Ed Thoman, AF Biometrics Lead Command Manager

Privacy is not an issue with the hand scanner. The handkey senses the **geometric shape** of the hand, not the **fingerprints**.

Photo: gret by Staff Sgt. K.D. Williams/AFCA

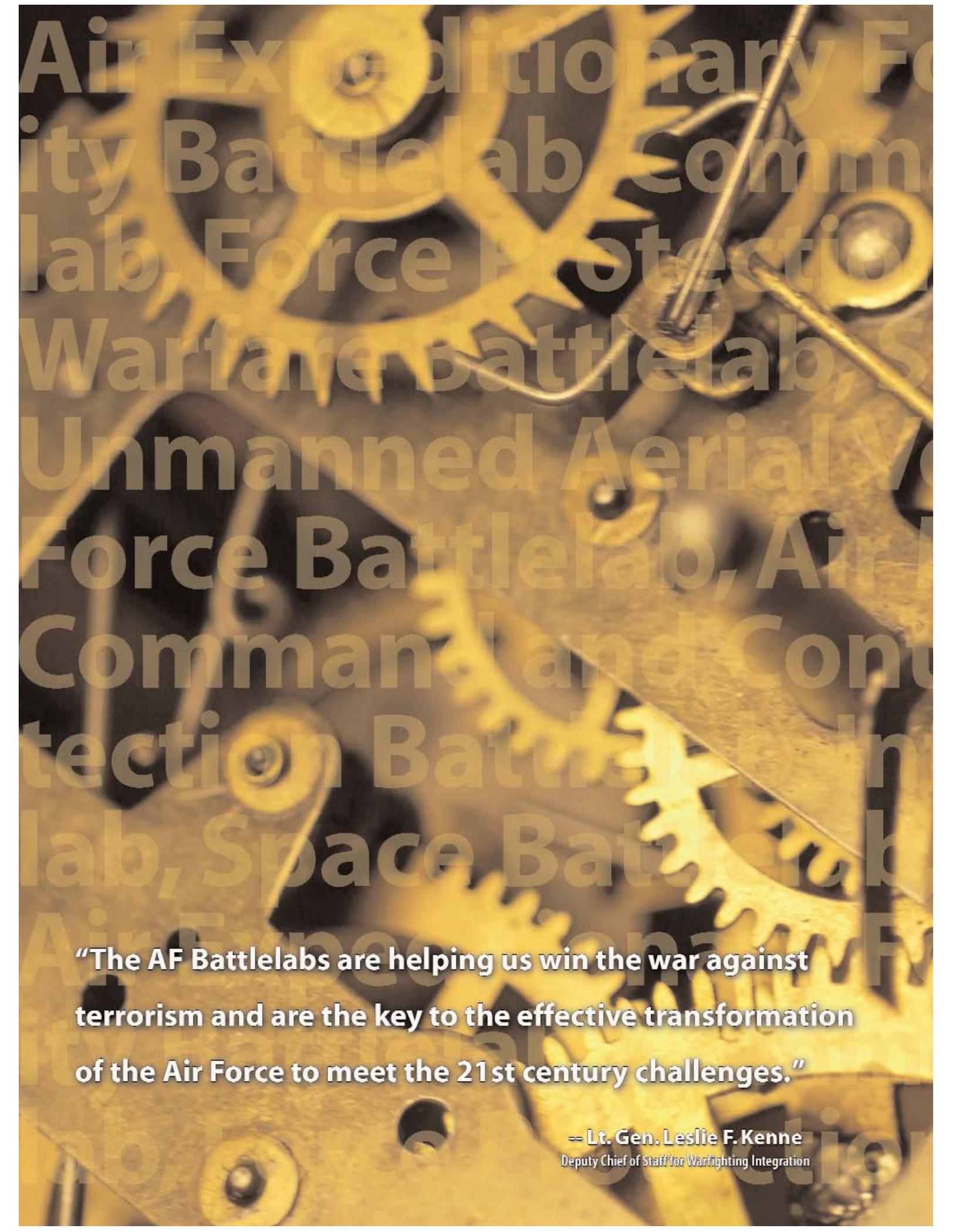


# FREEDOM

Where FREEDOM takes hold, hatred gives way to hope. When FREEDOM takes hold, men and women turn to the peaceful pursuit of a better life.

-George W. Bush





**“The AF Battlelabs are helping us win the war against terrorism and are the key to the effective transformation of the Air Force to meet the 21st century challenges.”**

**-- Lt. Gen. Leslie F. Kenne**  
Deputy Chief of Staff for Warfighting Integration